DEVELOPING SUSTAINABLE CHILD SURVIVAL SERVICES WITH THE PRIVATE SECTOR IN MALAWI: A REPLICATION OF LESSONS LEARNED

CS-X
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MID-TERM EVALUATION

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ACRONYMS

AIDS - Acquired immunodeficiency syndrome
ALRI - Acute lower respiratory infection
CBD - Community based distributors (of contraceptives)
CDD - Control of diarrhea1 diseases
CSVII - Child Survival VII project
CSX - Child Survival X project
DHO - District health office/officer
DIP - Detailed implementation plan
EPI - Expanded programme on immunization
FP - Family planning
HIV - Human immunodeficiency virus
HIS - Health information system
HSA - Health surveillance assistant
KPC - Knowledge Practices and Coverage (survey)
MCH - Maternal and child health
MOH - Ministry of health and population
NGO - Non-governmental organization
OPD - Outpatient department (or clinic)
PH - Project HOPE
PVO - Private voluntary organization
STD - Sexually transmitted disease
WHO - World health organization

PROJECT HOPE - CHILD SURVIVAL X PROJECT - THYOLO AND MULANJE MID-TERM EVALUATION

I. ACCOMPLISHMENTS

TIMELINE. The Project HOPE Child Survival X Project in Mulanje and Thyolo is a follow-up on lessons learned in a Child Survival VII Project in Thyolo only. Start of project was September 1, 1994 and the planned completion date is August 3 1, 1997. The mid-term evaluation was done in June 1996, with approximately 14 months of project time remaining.

PROJECT GOAL

To reduce morbidity and mortality in children under five and women of fertile age in collaboration with private sector tea and coffee estates in Thyolo and Mulanje.

PROJECT OBJECTIVES: The Detailed Implementation Plan lists 27 specific objectives summarized as follows:

EPI

- 90% of children 12-23 months will be fully immunized
- Drop-out rate will be maintained at 2%
- 80% of women with children under two will be protected with TT2 at time of birth of the youngest child under two.

CDD

- 80% of children with diarrhea will be receiving the same or more breastmilk, food based liquids/foods
- 80% of children with diarrhea will receive home available foods
- 80% of mothers of children under two will know to give extra meals to their children with diarrhea during the recovery period

Nutritional improvement

- 90% of children will be breastfed within the first 8 hours after birth
- 70% of children 20-23 months will still be breastfeeding
- 40% of infants will be breastfed exclusively for the first four months
- 80% of mothers with children under two will know that they should start adding foods between four and six months
- 60% of mothers with children 12-23 months will know to give children foods rich in vitamin A
- 70% of pregnant women will eat more than usual during pregnancy
- 40% of children 6-23 months will have received vitamin A within the last six months
- 90% of children under two will have a Road to Health Card.
- 90% of children with Road to Health Cards under two will have been weighed at least once in the last two months.

Maternal Care and Family Planning

- 40% of mothers with children under two will know danger sings of pregnancy
- 60% of mothers with children under two will have made two or more antenatal care visits for their last pregnancy
- 60% of mothers with children under two will have a maternal health card
- 25% of mothers with children under two not desiring children in the next two years will be using modem contraceptives.

Case management of Childhood ALRI

- 75% of estate medical workers will be managing ALRI cases according to MOH/WHO guidelines.
- 50% of mother will seek early treatment (within 24 hours) for child with high fever, cough, rapid or difficult breathing

Control of Malaria

- 80% of women with children under two will know how malaria is spread and how to prevent it.
- 80% of women with children under two seek medical treatment for child with a fever of unknown origin/presumptive malaria.

HIV/AIDS prevention

- 60% of mothers with children under two will know three methods of HIV transmission and prevention.
- 80% of compound watchmen will be knowledgeable about HIV transmission and prevention
- 90% of estate medical staff will be knowledgeable about HIV transmission and prevention
- 90% of estate medical staff will manage STD cases in pregnant women using a symptom based approach.

PLANNED INPUTS

Although the DIP shows inputs for each project intervention, many of the planned inputs cover more than one intervention. Inputs can be divided into Recruitment/Training, Health education/promotion, Service expansion/provision, Studies and Support.

RECRUITMENT/TWINING. Planned training inputs included:

1. Recruitment/Training for HSAs
   - New Mulanje HSA and replacement Thyolo HSA basic training - all interventions
   - Thyolo current HSA refresher training - all interventions
2. Recruitment/Training for volunteers
   - Mulanje. New volunteers - all interventions.
   - Training of Thyolo volunteers was done prior to start of project. Training of

replacement volunteers in Thyolo may be done in some estates depending on support of the estate. - all interventions

3. Orientation for compound committees/village health committees
   - Compound health committees (Canceled)
   - Village health committees - Mulanje only - orientation to HSA and volunteer work
4. Training for compound watchmen and dormitory leaders - HIV only
   - Covers both Thyolo and Mulanje
5. Training of estate medical staff
   - ARLI case management
   - Supervisory skills (Thyolo covered under previous project)
   - Family planning
   - STD case management
6. Training of CBDs (Community based distributors of contraceptives)
   - Expansion from CBDs trained on two estates in Thyolo in last project.

HEALTH EDUCATION / PROMOTION

1. Health education sessions for compound residents (primarily mothers)
   - Sessions planned about monthly in each compound - cover all topics
2. Referrals/follow-up.
   - Sick children, problems with compound sanitation or other conditions referred to health services or management. Follow-up of patients (including malnourished children) and use of preventive services (e.g. under five clinic attendance) done routinely in compounds.

SERVICE EXPANSION/PROVISION

1. Expansion of estate-based prevention clinics
   - Family planning services
   - Antenatal clinics
   - Under fives clinics
2. HSAs to help provide preventive clinic services

STUDIES AND SUPPORT

1. ARI case management and home management study
2. Focus groups with mothers on breastfeeding
3. Routine support by PH staff of HSA supervision by estate medical staff.
4. Curricula, supplies, materials and transport for all of the above.

B. MEASURABLE INPUTS/OUTPUTS BY INTERVENTION

NON-INTERVENTION SPECIFIC INPUTS/OUTPUTS (as of time of mid-term evaluation)

1. Recruitment/Training of HSAs
   - 19 new HSAs for Mulanje and 16 replacement HSAs for Thyolo trained.
   - Refresher training for 33 current HSAs in Thyolo.

- At time of evaluation all but a few HSA posts were filled with trained staff.

2. Recruitment/Training of volunteers / village health committees
- 192 new compound and village volunteers trained in Mulanje versus 300 planned
- Volunteers on Thyolo estates were trained under the CSVII project.
- 48 village health committees oriented (a few villages remain to be covered)

3. Supervision, curricula, supplies, materials and transport for the above.

HEALTH EDUCATION - OVERALL OUTPUTS

One of the key activities of the HSAs is giving health talks to groups, mostly of women in either compounds or during prevention clinics. The topic and attendance at such talks is reported monthly by the HSAs in their reports to their estate supervisor and to Project HOPE. The total number of talks per year and the total attendance is given in the table. This can be compared to a resident population of about 37,000 in the Thyolo estates and about 18,000 in the Mulanje estates compounds. If we assume that about half the compound population is children and that half of the adults are not available to attend most talks because of work, the target population for the talks would be very roughly 9,000 in Thyolo and 4,500 in Mulanje. This would imply, using the 1995 Thyolo and first half 1996 Mulanje figures, that the target population attends an average of about five health education talks per year (although the target group may vary with families moving on and off the estate). There appears to be a decline in total health education output over the last two years in Thyolo, though this may be partly due to decreased reporting to the I-IIS (see HIS section).

Total reported health education output by HSAs in Thyolo

	1996 (Jan-May)			1995			1994		
	Talks	Persons	%	Talks	Persons	%	Talks	Persons	%
Diarrhea	219	4518	26%	443	9194	20%	647	14287	22%
Nutrition	45	624	4%	262	3897	8%	304	4891	8%
EPI	55	1030	6%	198	3454	7%	207	4075	6%
Malaria	157	2910	16%	411	7138	15%	508	10050	16%
ARI	126	2233	13%	284	51501	11%	284	5081	8%
FP	72	1545	9%	186	4000	9%	235	6000	9%
AIDS	87	1647	9%	267	4602	10%	354	7296	11%
Sanitation	94	1964	11%	346	5696	12%	378	7340	12%
Hygiene	id	1037	6%	245	3592	8%	282	4716	7%
Antenatal	15	140	1%	1	5	0%	0	0	0%
/ TOTAL	920	17668		2645	46728		3199	63738	

- Annualized 1996 totals are 2208 sessions and 42,400 persons attending.
- Family planning sessions/attendances for 1994 and 1995 are estimated based on the 1996 rate since the original data is missing from the data set.

Total reported health education outputs by HSAs in Mulanje

	1996 (Jan-May)			1995		
	Talks	Persons	%	Talks	Persons	%
Diarrhea	86	1372	16%	229	4193	18%
Nutrition	76	899	11%	148	2527	11%
EPI	80	933	11%	144	2479	10%
Malaria	95	1140	13%	175	3049	13%
ARI	64	803	9%	68	902	4%
FP	75	966	11%	152	2466	10%
AIDS	63	838	10%	153	3567	15%
Sanitation	74	985	12%	133	2901	12%
Hygiene	56	580	7%	87	1591	7%
Antenatal	0	0	0%	0	0	0%
TOTAL	669	8516		1289	23675	

- The annualized 1996 rate is 1,605 talks with 20,400 persons attending.
- Work did not start in many Mulanje estates until towards the end of 1995.

Women with children under two were asked if they had attended a health talk in the last six months. 46% of the Thyolo women and 52% of the Mulanje compound women replied yes, compared to 35% of Mulanje village women. A higher percentage reported having been visited at home by an HSA or volunteer (62% and 61%) with most visits having taken place within the last three months. The health education talk attendance rate is a slight reduction from the rate in 1994 in Thyolo, which was 57%, while the home visiting rate showed not change. The failure of a higher percentage of women to report attendance at a health talk may be due in part to the turnover of families in the compounds, in part to the variability between HSAs, with some being much more active in giving talks than others. The end result may be that some women attend talks very frequently while others are exposed to very few if any health talks. Overall, however, the quantity of health education provided by the HSAs direct to compound residents is impressive.

B.1 IMMUNIZATION (EPI) INPUTS AND OUTPUTS

		THYOLO			MULANJE			
		1991	1994	1996	1994	96O	96C	96V
Immunization coverage in children 12-23 months old at time of survey.	n=		150	142	120	147	70	77
	BCG	94%	85%	78%	86%	84%	87%	82%
	OPV1		87%	83%	87%	89%	91%	87%
	OPV2		86%	82%	87%	87%	87%	87%
	OPV3		85%	82%	85%	86%	86%	86%
	DPT1		87%	83%	87%	89%	91%	87%
	DPT2		86%	82%	86%	87%	89%	86%
	DPT3	85%	85%	82%	85%	86%	87%	86%
	Measles	82%	85%	76%	82%	82%	81%	83%
	Fully immunized			70%	80%	76%	76%	77%
Dropout rate	(DPT1- 3)/DPT1		2%	2%	2%	3%		

C = compounds, V = villages, 0 = Overall

Measuring coverage of tetanus toxoid immunization is difficult, since by the time of the survey there are more mothers who have lost their antenatal cards than who still have them. If the rate of tetanus toxoid immunization is based on all women, as was done for the baseline survey in Mulanje, the estimated TT2 coverage rate is falsely low (47%), since most women who have lost their cards can also be assumed to have received TT. If the rate is based only on women who have cards, as was done in the 1996 survey the rates may be falsely high (77-84%) since approximately 20% of women who report never having had a maternal card may not have received TT (although this itself is not certain).

		THYOLO			MULANJE			
		1992	1994	1996	1994	960	96C	96V
Tetanus toxoid immunization status at time of birth (women with children under age two)	n=		NA	104	300	98	41	57
	TTV1			88%	54%	92%	95%	89%
	TTV2	89%		77%	47%	84%	83%	84%
	TTV3			42%	18%	41%	46%	37%
	TTV4			19%	3%	23%	27%	21%
	TTV5			9%	1%	10%	17%	5%
Women with maternal card	Have			34%	44%	32%	27%	36%
	Lost			39%		39%	41%	46%
	Never had			21%		21%	29%	15%

Note: 1994 and 1996 Mulanje TT coverage figures are not directly comparable.

EPI SERVICE PROVISION. There are 17 permanent under-fives clinics offered on the estates (12 in Thyolo and 5 in Mulanje) and more if mobile clinics are counted. Together with clinics run by MOH in villages near the estates and by mission health centers these provide reasonably accessible immunization services for the estate population. There has been a gradual increase in the number of estates offering under fives clinics over the years although this was promoted as much by the District Health Offices as by Project HOPE. Project HOPE is encouraging several other estates to consider starting under fives clinics.

Overall, EPI coverage rates have decreased slightly between the baseline surveys in 1994 and the midterm survey in 1996. This is almost certainly due to the extreme difficulties that the national EPI program experienced from April 1995 through March 1996 when the government adopted a "cash based" budgeting system that cut operational funds for health expenditures by more than half nationwide. In addition, there was a nationwide shortage of DPT vaccine in the first part of 1995. Both of these problems were beyond the scope of Project HOPE to deal with and are now resolved. In addition, a UNICEF sponsored survey in late 1995 found a large drop in national immunization rates, compared to which the drop in the estates is small. This may be due to the ability of the estate clinics to function without government operational funds, as long as the supply of vaccines can be maintained.

IMMUNIZATION ROSTERS. Volunteers in the Mulanje estate compounds and villages have been trained to list all children under five and all women of child-bearing age on immunization rosters in order to improve follow-up. A number of volunteers were interviewed regarding use of these rosters. While the volunteers believe these rosters will improve follow-up of children and

women it is still too early to tell if this will have a positive impact on immunization coverage rates (see HIS section). The roster of all adult women is particularly difficult, since women who have not children or are not pregnant may see little use in receiving TT vaccination.

HEALTH EDUCATION. EPI is the topic of 6-l 1% of health talks. This is not enough to reach all target women annually, but may be adequate, since general knowledge of EPI is very high in the population already.

STAFF KNOWLEDGE. Knowledge of immunization among HSAs and Volunteers was not measured for the mid-term evaluation, since this has not been a problem in the past.

MOTHERS KNOWLEDGE. Mothers were asked about when a child should get measles vaccine, what the purpose of the TT vaccine is and how many doses are needed. About 40-50% of women know the correct age for measles vaccine, about the same proportion do not know what the TT vaccine is for, but over 70% know that a women should have more than two doses of TT. None of these rates are significantly changed from the baseline survey, (Household KPC Survey results are available upon request from the field.)

DISEASE RATES. Measles case rates in children under five shows a steady downward trend fi-om 1992 through the end of 1995, although there have been isolated outbreaks in 1996. From anecdotal reports these have also been seen at the national level.

B.2 CONTROL OF DIARRHOEAL DISEASE (CDD)

DISEASE RATES. The rates of diarrhea in the population vary tremendously between wet and dry seasons and between one year and the next (with drought years having less watery diarrhea, but often more dysentery). This is clearly observed from estate outpatient data. A number of estate medical staff stated during the evaluation that severe diarrhea cases have decreased since the start of the project, but this is not possible to quantify.

HOUSING AND WATER SITUATION BY CENSUS

THYOLOCENSUSRESULTS

	Oct-91		Mar-93		Feb-94		April-96	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Houses	6,136		14,705		12,718		10,921	
Latrines	3,624	1.7	6,927	2.1	6,327	2.0	4,786	2.1
Clean water	188	32.8	504	29.2	480	28.5	398	28
Disk racks			8,289	2.3			4,122	2.5
Rubbish pits	1,147	5.3	2,848	5.8	2,283	5.8	1,382	7.5
Bathing rooms			9,502	1.5	7,839	1.8	8,745	1.5

Note - some census returns are incomplete so rates are not always comparable

MULANJE	COMPOUND				VILLAGE			
	July-Sept 95		April-98		1995		April-98	
	Number	Ratio	Number	Ratio	Number	Ratio	Number	Ratio
Houses (occupied)	5,510		4,895		11,588		9,333	
Latrines	2,187	2.5	2,870	1.7	5,535	2.1	4,800	1.9
Clean water	747	7	748	7	231	50	179	52
Disk racks	2,542	2.2	2,250	2.2	3,583	3.3	3,492	2.7
Rubbish pits	1,236	4.5	1,082	4.5	2,126	5.5	2,528	3.7
Bathing rooms	3,405	1.8	3,255	1.5	4,981	2.3	4,134	2.3

Note - the two villages censuses did not cover the same villages but did have some overlap

The periodic censuses of estate housing (and in Mulanje of surrounding villages) shows that the number of houses per clean water supply improved gradually in Thyolo since the start of the CSVII project while other facilities have stayed the same. In Mulanje the number of clean water points compared to houses is much higher than in Thyolo, since many estates have gravity fed piped systems with large numbers of taps, rather than boreholes or covered wells. Villages are found to be similar to estate compounds with the exception of clean water points, which are in very short supply off the estates. The increased number of latrines in Mulanje between 1995 and 1996 is thought to be a management response to reports of the HSAs regarding compound conditions.

HOUSING SITUATION BY MONTHLY REPORT - "Satisfactory" rate.

	THYOLO						MULANJE	
	1991	1992	1993	1994	1995	1996	1995	1996
Houses	68%	80%	89%	92%	88%	88%	81%	73%
Pit Latrines	75%	81%	86%	87%	86%	85%	75%	68%

There was a steady improvement in the proportion of houses and latrines found "satisfactory" during monthly inspections Thyolo during the early years of the CSVII project. These gains have been maintained under CSX. The situation in Mulanje is less clear, since many estates did not have HSAs reporting until late in 1995, so the 1996 reports are not from the same mix of estates as the 1995 reports. Closer examination of the reports will be needed to see if there is actually a deterioration in Mulanje or not.

HEALTH EDUCTION. Diarrhea, Hygiene and sanitation are the major topics for health education talks, making up about 40% of all reported attendances at talks. Although diarrhea is a major problem, the share going to these topic areas may be out of proportion to other problems. In part this is due to the emphasis of the MOH approved training curriculum for HSAs and in part due to the interests of the estates.

HSA/VOLUNTEER/COMMUNITY KNOWLEDGE AND PRACTICES. Of 14 HSAs interviewed in Thyolo and Mulanje, all participate in health education related to diarrhea/water/sanitation. All refer children with bloody diarrhea to the health services. Eight report that they do some chlorination of water supplies and all but one knew the proper method for making and using chlorine stock solution. Most report being involved in mobilizing people

for digging rubbish pits, clearing surroundings and digging latrines.

Of 21 volunteers interviewed water and sanitation were the health areas they mentioned most often when describing their work and most often as the biggest health problems in their compounds. Most volunteers report being involved with health education on diarrhea, and digging rubbish pits. Fewer mentioned latrines since this is usually taken up by the HSA and estate management. Most (18 of 21) knew to refer a child with bloody diarrhea to the health services.

Of 19 compound and village members groups interviewed the most common health problems mentioned were sanitation and malaria. The main activities to improve their own health, in particular by the men, have been sanitation related.

MOTHER'S KNOWLEDGE AND PRACTICES. (See survey report for details). About 40% of mothers reported that their children had diarrhea in the last two weeks. Of these the proportions that gave the following treatments were (ranges are for the two districts):

	Midterm	Baseline
- More or same breastfeeding	64-7 1%	54-59%
- More or same other fluids	54-68%	55-76%
- More or same foods	43-55%	45-64%
- ORS	28-32%	29-52%
- Sugar-salt solution	28-3 8%	26-33%
- Cereal based ORT	3 5-48%	14-20%
- Other fluids	17%	O-l%

There appears to be a gradual improvement in appropriate practices during diarrhea, in particular with increased use of cereal based ORT or other fluids, while use of ORS or sugar-salt solutions is staying the same or declining.

80-94% of mothers reported seeking treatment for their child's diarrhea. About two-thirds of families living on the estate used the estate clinic, versus about one-third using a government health center or the district hospital. For families in villages, the division was nearer to half and half, with 10% using a traditional healer or pharmacy.

For all mothers, knowledge of danger signs of diarrhea, actions to take for diarrhea, for recovery from diarrhea and to prevent diarrhea were asked. The most prominent danger sign mentioned by mothers is "weakness or tiredness" (65% of respondents). Many fewer mentioned dehydration (22-28%), or prolonged diarrhea and there is little change in the answers since the baseline. The most common action to take is to take the child to the health services (57%), although most mothers also mention either giving fluids, ORS, or cereal ORT. Very few mothers mention withholding fluids or food. Again there is no significant change from the baseline, although there is a shift towards "fluids/diluted phala" from "more to drink" or "more frequent feeds". For recovery from diarrhea most mothers mentioned one or the other of "more frequent feeds" "more

food" or "higher caloric food" while less than 20% do not know what to do and less than 20% mentioned some other measure. Means of preventing diarrhea that were most commonly mentioned were to "cover the child's food" (45%), "wash hands before preparing food" (22-32%) and "wash hand after using the toilet or changing the baby" (16-20%).

Overall, knowledge and practices related to diarrhea are fairly good, though there are still 20-50% of mothers who give less of or stop either breastmilk, fluids or foods during diarrhea. Foods appear to be decreased more often than fluids, which is not as serious as long as catch up feeding occurs after the diarrhea.

B.3 NUTRITIONAL IMPROVEMENT

HEALTH EDUCATION. Nutrition is the topic of 4-l 1% of all health education talks. Given the large number of topics to be covered (breastfeeding and weaning practices, growth monitoring, vitamin A and feeding in pregnancy), this area may deserve more emphasis.

GROWTH MONITORING ROSTERS. Rosters of children under five have been introduced to volunteers in Mulanje to keep track of what children have been weighed which months and whether the weights are increasing or decreasing. The mid-term evaluation team was not able to determine if these are effective in increasing coverage of growth monitoring. (See HIS section).

HSA/VOLUNTEER KNOWLEDGE. Health staff were only asked about the use of vitamin A and about how often capsules should be given. Of 14 HSAs interviewed twelve know that it prevents blindness. Most know that green leafy vegetables (11) and yellow fruits (13) are good sources of vitamin A and that children should receive a vitamin A capsule every six months (11). The level of knowledge in the 21 volunteers was lower, with about half knowing that vitamin A prevents blindness (11) or other diseases (8). Others did not know or thought it gives "energy" or "appetite". Only 5 of 21 knew the six monthly schedule for capsule distribution, but 14 knew of yellow fruits and leafy greens as a source.

ESTATE PRACTICES. All under five clinics should keep supplies of vitamin A capsules, which are available from the district health services (as are vaccines). There has not been problem of stockouts in capsules.

Fifteen of the sixteen estate managers interviewed said that vegetable gardens are allowed on estate compounds (although there are sometimes restrictions on growing maize). It appears that this policy has been influenced by Project HOPE since most estates are reported to have not allowed this in the past. Small "kitchen gardens" represent an opportunity to grow vitamin A rich and other nutritious foods.

MOTHER'S KNOWLEDGE AND PRACTICES - INFANT AND CHILD NUTRITION. Results from the midterm survey show an increase in the exclusive breastfeeding rate for children O-3 months of age from 26-33% in 1994 to 44-55% in 1996. Nearly all children receive solid-semisolid foods by 5-8 months of age (no change from baseline) and 71-73% are still

breastfeeding as 20-23 months of age (compared to 45-59% at baseline). 89-95% of women start breastfeeding within 8 hours after delivery (no change) while 76-83% of women know to start giving supplementary foods at age 4-6 months (compared to 53-58% at baseline). The most popular supplemental food remains maize porridge or "phala" (83%) while fruits, vegetables, avocado and beans/nuts are also popular. Oil is rarely added to foods.

Overall the results show a substantial shift away from the common practice in Malawi of too early supplementation of breastfeeding with other foods, and if due to the project interventions is a major accomplishment. However, the small number of children in the O-3 month age group makes even these results rather uncertain.

PRACTICES - GROWTH MONITORING/VITAMIN A. 82-86% of children have an under five card (compared to 86-91% at baseline) and 72-82% of these had been weighed in the last two months (no change). Taken together, about 60-70% of all children under two had been weighed in the last two months.

Of all children 12-23 months old, 27-32% had received a vitamin A capsule in the last 6 months according to their under five card (if any). This compares to 16% in Mulanje at baseline (no baseline is available for Thyolo). This may represent a significant improvement under the project.

PRACTICES - NUTRITION IN PREGNANCY. There has been no significant change in the proportion of women who report eating the same or more during their pregnancy (46-54% versus 50-52% at baseline) versus those who report eating less (45-54% versus 44-49%).

B.4 MATERNAL CARE AND FAMILY PLANNING

ESTATE MATERNAL CARE SERVICES. Unlike under fives clinics, which are already fairly widespread, only a few estates had antenatal clinics prior to the start of the project. Project HOPE and the district health services have encouraged the establishment of additional antenatal clinics on estates. In Thyolo three clinics have been started between 1994 and 1996 bringing the total to eight, while in Mulanje the number has increased from three to seven. Further expansion of antenatal clinics is being encouraged to improve the accessibility of this service on the estates.

MATERNAL CARE PRACTICES. Nutrition and tetanus toxoid coverage in pregnancy are covered under EPI and Nutrition above. It is difftcult to calculate the number of women receiving antenatal care since more had lost their antenatal card by the time of interview (39-44%) than had kept it (32-34%). Even among those who say they never had an antenatal card (21-22%) it is not clear if they received any antenatal care since this is not asked directly. Among women who have the card and information recorded, none report no visits, about 5% only one antenatal visit and about 95% two or more visits. If those with lost cards are similar to those with cards, and those that had no card also had no antenatal care, then the overall two antenatal care visit rate would be about 70%, but this is speculative and the actual rate of antenatal care is impossible to calculate.

Women were asked about danger signs in pregnancy. A large proportion stated that they do not

know about these (30-36%) while generally less than 15% mentioned bleeding, swelling of the hands or feet, or headaches. 46-50% mentioned other symptoms, such as early rupture of the membranes or abdominal pains. There has been no change since baseline in these answers and knowledge of key messages for danger signs in pregnancy remains low.

ESTATE FAMILY PLANNING SERVICES. These have expanded greatly under the project. Thyolo is reported to have had almost no family planning services on the estates prior to 1990. Currently there are twelve sites offering services, of which five have opened since the start of the CSX project in 1994. Mulanje had three service sites prior to the project which has now expanded to eleven.

The project has trained 27 estate medical staff in basic family planning services (a three day course) and is training two providers from the estates in the six-week long FP course. Additional staff were trained in Thyolo under the CSVII project, as well as 12 volunteer community based distributors on two estates (although only a few of these remain active as CBDs). A number of the estate medical staff interviewed expressed interest in further training in family planning, Most welcomed the idea of CBDs to further increase access to family planning even though clinic based services are already fairly accessible. The estate medical staff recognize that with high staff turnover, it is better to have more than one potential family planning provider (e.g. medical assistant and HSA and CBDs).

HEALTH EDUCATION. Family planning is a popular topic area for health education sessions, with 9-l 1% of all talks being in this area. On the other hand, antenatal care is almost never mentioned as a health education talk topic. It is not clear if this is the case, or if the reporting system (which was designed prior to antenatal care being included as a topic) does not capture this activity.

HSA/VOLUNTEER KNOWLEDGE. All HSAs interviewed for the midterm evaluation reported carrying out health education for family planning. Six of fourteen said they distribute contraceptives for family planning (although 11 report distributing condoms for HIV control). Six have held male motivation meetings in addition to the usual health education sessions that are targeted more to women. All HSAs mentioned the pill as a family planning method, while nearly all also mentioned the IUD, injection, condoms, spermicides and sterilization. All but one mentioned the "child growing well" as benefit of family planning and most mentioned the other benefits. All HSAs knew at least one location for FP.

Among volunteers half reported they do health education for family planning. Only 3 of 21 visited distributed contraceptives (although 5 distributed condoms for HIV control). Almost all mentioned the pill and injection as family planning methods and most (16-17) mentioned the IUD and condoms as well. Other methods were less familiar to volunteers. Most could name at least some of the benefits of family planning and all knew of at least one location for services.

MOTHERS FAMILY PLANNING PRACTICES. Standard Child Survival Project KPC questions were used to determine if the mothers interviewed were currently pregnant, if they

wanted a child in the next two years, and if both answers were no, whether they or their partner were using a family planning method and what it was. The detailed results are available upon request from the field. In Mulanje there was a large increase in modem contraceptive use rates between the baseline and midterm surveys, from 11% of all women with children under two to 21%. The preferred contraceptive method was by injection (62% of all methods compared to 40% at baseline) with oral contraceptives a distant second. Although the clusters in the midterm evaluation covered both villages and compounds, compared to only compounds in the baseline, the increase in usage was seen throughout. In Thyolo, there was an apparent decrease in modem contraceptive usage from 18% to 15% of women with children under two. However, this may be due to a problem with the KPC survey questions in Thyolo in 1996. 20% of women who are using family planning did not indicate what method they were using. If they were using modern methods in the same proportion as other respondents, there would be no drop modem method usage rates.

It is reasonable to conclude that the improved services and health education from the project had resulted in increased family planning coverage in Mulanje in 1994-1996 even as they did in Thyolo between 1991 and 1994.

B.5 CASE MANAGEMENT OF ALRI/PNEUMONIA

DISEASE RATES. Upper respiratory infections make up about 15% of all outpatient visits to estate clinics and as much as 20% of all visits for children under five (total lo-15,000 visits per year in children on Thyolo estates). Pneumonia and lower respiratory tract infections make up 2-4% of all outpatient visits, but are much more serious. There is a slight increase in cases during the height of the rainy season, November through March, but this may be due as much to increased employment during this period as to increased disease rates. Some estate medical staff have reported seeing fewer severe cases brought in late but this is not possible to quantify.

MANAGEMENT OF ALRI AT HOME AND BY ESTATE STAFF. A Project HOPE study involved interviews with 99 mothers who had brought children for treatment of ARI to determine home care practices and delays in treatment, and a review of knowledge and practices of 32 estate health care providers (13 of which were observed providing care). Conclusions included that home treatment for severe ARI was common, often included ineffective or potentially dangerous items and waiting for the home treatment to take effect often led to delay in bringing the child for treatment (only 27% came within one day of a danger sign developing and only 59% within two days). Health workers showed better knowledge of correct assessment and treatment of ARI on questioning than on observation (only 4% of cases had breathing rate counted). Most would benefit from strengthening or updating in management of ARI, as well as fever and diarrhea.

HSA/VOLUNTEER KNOWLEDGE. Nearly all HSAs interviewed provide health education regarding ARI to estate residents. When asked about danger signs of ALRI all but one mentioned difficult breathing/indrawing, but only five mentioned rapid breathing and six mentioned wheezing. All HSAs refer children with ARI to the clinic, but most did not mention other management measures, such as continued breastfeeding, frequent feeding or keeping the child

warm. As preventive measures, twelve mentioned house smearing (to reduce dust) and nine avoiding having fires inside the house. Other measures were rarely mentioned.

Only eight of 21 volunteers give health education on ARI. In terms of knowledge about half mentioned difficult breathing/indrawing and half rapid breathing as signs. Five mentioned wheezing. Volunteers from Mulanje, who are more recently trained, seemed to do better. All advise taking a child with ARI to the clinic but other measures are rarely mentioned. 14 mentioned house smearing and four not lighting fires in the house as preventive measures. Seven mentioned immunization and five vitamin A foods, which was more than from the HSAs.

HEALTH EDUCATION. ARI is the topic of 4- 13% of all group talks given in compounds.

HOME ARI KNOWLEDGE AND PRACTICES. 42-48% of mothers reported that their child had a cough or difficulty breathing in the last two weeks (no change). Of these nearly three-quarters reported that the child had fast or difficult breathing and 95% of these took the child for treatment. On estates 64-78% of children are seen at the estate health center, while only 23% of children in villages are seen on the estates (with 54% seen at the district hospital or government health center).

Danger signs mentioned by mothers have shifted from mostly cough (66-75% at baseline versus 43-45% at midterm) to mostly "fast or difficult breathing" (36-42% at baseline versus 48-50% at midterm). This is a positive sign, but chest indrawing is still rarely mentioned spontaneously (4-5%).

B.6 CONTROL OF MALARIA

DISEASE RATES. Malaria makes up about 25% of all OPD visits in both children and adults. In children under five there is a strong seasonal rise from November through May with a peak in February or March. One medical assistant noted that during the 1996 rainy season, there were much fewer than expected serious or cerebral malaria cases in children from the estate compounds while there were cases from the villages off the estates. This observation is difficult to quantity.

HEALTH EDUCATION. Malaria is a very popular topic for health education talks, second only to diarrhea/sanitation with 13-16% of all talks on this topic area. Unfortunately, as seen below, there remain a large proportion of the population that reports poor knowledge of malaria transmission or prevention. It is not clear why this is the case.

HSA/VOLUNTEER KNOWLEDGE AND PRACTICES. Nearly all HSAs carry out health education on malaria control and rapid treatment. Most also help with sanitation for the control of malaria, such as clearing surroundings, ventilation of houses, spraying, putting oil on stagnant water, etc.

HSAs all recognize fever, vomiting and diarrhea as signs of malaria and most report head or body aches as well. They advise mothers to reduce fevers by tepid sponging and most know to refer a

child to the clinic and give extra foods after a fever. Thirteen mentioned clearing surroundings as a preventive measure and most mentioned sleeping with a mosquito net or using repellents. Fewer mentioned closing windows at night and avoiding maize or bananas near the house. Prophylaxis in pregnancy was not mentioned.

Only about half of volunteers give health talks, but most help with clearing surroundings and similar activities. Almost all mentioned fever as a symptom of malaria, but only about half mentioned the other major symptoms. Almost all know how to reduce the fever and to refer the child. The major preventive measure mentioned was clearing of surroundings, while half said to close windows at night. Only a few thought of nets or repellents and only two mentioned prophylaxis in pregnancy.

HOUSEHOLD KNOWLEDGE AND PRACTICE. 56% of mothers reported that their children had a fever during the last two weeks compared to only 27-29% in 1994. (1996 has been a very bad year for malaria and the 1996 survey took place much closer to the peak season than the 1994 surveys). 91-96% took their child for treatment with most estate compound mothers going to the estate clinics (62-71%) while village mothers go to a variety of services (estate 36%, MOH center, 25%, district hospital 15%, pharmacy 14%).

Only 50-61% of respondents report that the bite of an infected mosquito is how malaria is transmitted, while 25-33% think there is some other reason and 18-l 9% simply do not know. This is reflected in responses regarding what can be done to prevent malaria in which 38-44% do not know and the most common responses are to clear surroundings and drain breeding sites (20-30%). Few mention the use of insecticides, repellents or bednets, all of which may be too expensive for families to consider.

B.7 HIV/AIDS PREVENTION

ADDITIONAL PROJECT INPUTS. In addition to training of HSAs and Volunteers in HIV/AIDS prevention, Project HOPE has trained the resident watchmen in nearly all of the estate compounds in HIV and has facilitated the start-up of anti-AIDS clubs in most of the schools located near the estates. Training of dormitory leaders is planned for 1996.

Project HOPE agreed to facilitate the entry of Population Service International into the estates to introduce social marketing of condoms sold at very low prices. PSI worked with six Thyolo estates, but as of the time of the mid-term evaluation only two of the six reported success in selling condoms. This is as much due to the administrative difficulty of estate health services handling money (services are usually free to patients) as to resistance to purchase of condoms which is increasing rapidly in Malawi.

A number of planned inputs for HIV/AIDS prevention, including training of clinic staff in syndromic management of STDs are still planned but may be better financed under the new USAID/Malawi funded STAFH project on the estates rather than out of Child Survival.
Health education sessions and attendance

HSA/VOLUNTEER KNOWLEDGE AND PRACTIVES. All but one of the HSAs interviewed distributes condoms, seven of 14 counsel individuals in addition to the usual group health sessions and many HSAs mentioned special activities such as drama groups, the district health office band, songs and visual aids as part of HIV control activities on their estates. All HSAs know of the risk of sexual intercourse with infected person and most mentioned the other major methods to get HIV (piercing instruments, blood transfusion and mother to child). Most mentioned the major ways to avoid HIV (abstinence, faithful partner, using condom, avoid sharing piercing instruments, avoid pregnancy if infected). Few mentioned avoiding sex with infected persons but this may have been covered by other methods.

Only twelve volunteers give health education talks while ten organize talks that the HSA gives. Only five volunteers distribute condoms. All know that sexual intercourse with an infected person and contaminated needles or razors can cause HIV. Six mentioned mother to child transmission. For prevention 16 or 17 mentioned abstinence, using a condom and not sharing sharps for prevention. 13 mention a faithful relationship and 10 avoiding sex with an infected person or "risky sex".

HEALTH EDUCATION. HIV is the topic of 9- 15% of all health education talks.

MOTHER'S KNOWLEDGE. About 95% of respondents have heard of HIV/AIDS, but only 9- 19% know the difference between the two terms (no change). Questions were asked about how AIDS is transmitted and how one can prevent getting AIDS and mothers' spontaneous answers were noted. Since most respondents will only give one or two answers even if they know more, this method of questioning often is better at finding out what information is most readily remembered than the limits of the respondent's knowledge. When asked directly if HIV can be transmitted from mother to child in the CSVII midterm, 80% of mothers said that it could, while fewer than 5% ever mention this spontaneously.

In the midterm, there has been a slight shift towards mentioning sexual transmission most often and away from mentioning razors, needles or "other methods". For example mention of "multiple partners" went up fiom 39-46% at baseline to 50-63% at midterm, while mention of razors/needles went down from 57-60% to 37-5 1% and mention of "others" from 22-26% to only 9- 11%. Similarly, preventive measures mentioned have shifted away from "avoid razors/needles" (from 43-45% down to 26-38%) and from "other" (from 13- 17% to 7-8%) towards sexual behavior change, with the most striking change being in the number that mention "abstinence" as a method to prevent HIV (from 7-11% to 48-52%).

Overall, this is a welcome change, since it implies that people are thinking of sexual transmission of HIV as the more prominent danger, and sexual behavior changes as the more prominent ways to prevent infection. This corresponds with what are thought to be the larger risks in Malawi. Disappointingly however, the proportion mentioning "use condoms" as a way to prevent HIV infection has not increased between 1994 and 1996. Given the expected difficulty for many individuals of implementing "abstinence" as a personal control measure, more work may be

needed to increase acceptance of condoms.

C. OUTPUTS COMPARED TO OBJECTIVES/EXPECTATIONS

The project has achieved most of its planned inputs and outputs in terms of training, carrying out health education and improvements in clinical services. Many of those that remain can be completed easily before the end of the project and a few related to family planning and HIV control may be funded under the new STAFH project. The current status of knowledge and practices compared to the project objectives is more mixed but there are many positive trends already observable.

EPI - Fully immunized children has fallen slightly to 70-76%. The target of 90% could still be achieved if there are no more disruptions of the national immunization program and if the immunization rosters work well in Mulanje. DPT dropout rates have remained low. It is difficult to measure TT2 coverage, but it appears to be almost to target (77-84%) in women receiving antenatal care. The proportion not receiving such care is unknown but may be as much as 20%.

CDD - There has not been much improvement in the proportion of children receiving more or the same breastfeeding, fluids or food during diarrhea and it appears this is a difficult behavior to change. However more home fluids are being given and the 80% figure may be reached if all home fluids are considered together. The idea of giving more frequent feeding after diarrhea has not improved from the baseline and is only 32-44% versus the 80% target.

Nutrition - In contrast to the CDD program, there have been excellent progress in reaching the breastfeeding objectives. The rate of breastfeeding in the first 8 hours after birth has reached 89-95% (target 90%, baseline 83%). The rate of exclusive breastfeeding at O-3 months has reached 44-52% (target 40%, baseline 26-33%). The rate of breastfeeding at 20-23 months has reached 7 l-73% (target 70%, baseline 45-59%). The proportion of women who know they should start adding foods at 4-6 months has reached 76-83% (target 80%, baseline 53-58%).

Other nutrition targets are more difficult, with no improvement in women reporting eating more in pregnancy at 28-30% (target 70%, baseline 25-29%). There is no improvement in children with growth cards - 82-86% (target 90%, baseline 86-91%) and whether they were weighed in the last two months - 72-82% (target 90%, baseline 75-78%). There has been a modest improvement in the number of children 12-23 months who have received a vitamin A capsule in the last six months to 27-32% (target 60%, baseline 16%).

Maternal care is difficult to assess since most women do not keep their maternal cards after birth of the child. Only 32-34% still had their cards at the time of the survey (target 60%, baseline 44%). Based on those with cards only, antenatal care coverage is very high but it is low based on all women. The real rate is neither of these but remains unknown. Less than 20% of women spontaneously mention the danger signs in pregnancy (target 40%, baseline is also low).

Family planning appears to be very successful, with 23-28% of women not pregnant and not wanting a child in the next two years using a modem method (target 25%, baseline 16% in

Mulanje, not clear in Thyolo).

Meeting the targets for improved home management and medical staff treatment of ALRI depend on the training of medical staff planned for later in the project.

For Malaria, a surprisingly low percentage of mothers report mosquitoes as the means of transmission (50-61% versus a target of 80%) and too many do not know how to prevent malaria (38-44% "don't know" and 25% mention methods not in the standard health education messages versus a target of 80% knowing the standard methods). Fortunately, 91-96% of children with fever are taken for treatment (target 80%). None of these figures have changed greatly over the project.

For HIV prevention, the target is that mothers will name three methods of transmission and prevention. This may be unreasonable given the way that open-ended questions are often answered, with only the responses that come to mind first being given. In this regards there is a good shift from "don't know" and "needles/razors" towards sexual transmission in terms of both causes and prevention of HIV. Rates of spontaneously reporting condoms as a preventive measure remain low (18-21%). Watchmen have been trained in HIV prevention but were not interviewed for the midterm evaluation. HSAs and volunteers give more responses regarding HIV than mothers and may be more knowledgeable about HIV. Training of medical staff in syndromic STD management is planned for later in the project.

IL EFFECTIVENESS

Overall, the project has made good progress in meeting its the stated objectives in terms of home fluids for diarrhea, breastfeeding, vitamin A capsule distribution, family planning and HIV prevention, with significant changes from baseline, sometimes already reaching the end of project objectives. Treatment of children with fever is high but unchanged from baseline. Progress has not been made in EPI coverage, feeding during diarrhea, growth monitoring, feeding during pregnancy or knowledge about malaria. Progress in treatment of ARI and STDs by clinic staff awaits their training during the second half of the project. The coverage of antenatal care and tetanus toxoid is difficult to assess due to problems with record keeping. Both are likely to be near, but not at, the project objectives.

The project has been able to successfully include populations living off estate in Mulanje, increasing the number of beneficiaries substantially. The newly introduced rosters may be useful in targeting attention and in increasing coverage of EPI, growth monitoring and TT before the end of the project. Further targeting of educational efforts seems to be the only solution for the knowledge and home practice problems that remain with diarrhea, nutrition in pregnancy and knowledge of malaria. No major changes in project focus or strategy appears warranted at this time.

HI. RELEVANCE TO DEVELOPMENT

The populations of the tea estates have not been a common target of development efforts in Malawi, since they are considered part of the private sector. While there has been a long term relationship of the tea estate medical services with the government medical services at the district level, the government services have limited authority over the estate services, and better contact has been facilitated by the project, particularly in Mulanje.

The most important other development efforts are those of Project HOPE itself in the areas of HIV control and family planning. PH has done some training of "peer counselors" with funding from the European Union, and trained some HSAs in Thyolo in the "training for transformation" adult education and mobilization methods for HIV control as part of a separate USAID financed project. Starting in 1996, Project HOPE has received funding from USAID under the STAFH project for I-IIV/STD and Family planning activities in estates throughout Malawi, including the tea estates in Thyolo and Mulanje. Some of the activities that can be supported under the STAFH grant are expanded on the ones originally planned under CSX (e.g. syndromic treatment of STDs, training of CBDs) and financing of some of these may be better implemented under this more focused now project.

Iv. DESIGN AND IMPLEMENTATION

A. DESIGN AND IMPLEMENTATION

TARGET POPULATION. The size and characteristics of the target population associated with the estates is much more difficult to establish than for populations associated with most rural areas. This is due to several factors:

- Employment by the estates is seasonal, with high employment periods from about October through April and low employment from May through September. Total employment may double during the high season.
- Employment varies from year to year depending on rainfall (with drought in four of the last six years) and with changes in production (with gradual increases in per worker productivity over the years).
- Most of the employees of the estates do not live on estate compounds, but rather in villages near the estates. Even those that live in estate compounds may move back and forth to nearby or distant villages as they are employed and laid off.
- Different persons may be employed in different years, so the target individuals may be different even ifthe total target population stays the same. This may also affect ability to reach coverage rates.

A final complication in terms of target population is that families living on or off the estates cannot be treated the same by the project, in part due to the estates' reluctance to allow their HSAs to work off the estate. In the CSVII project in Thyolo, off estate families benefited from improved estate health services, such as family planning, but not from health education or estate

investments in improved housing conditions. In the Mulanje expansion area of the CSX project, Project HOPE is in the process of training volunteers and orienting village health committees in the villages that have the most closely workers From the estates. The original project plan indicated that estate-based HSAs would supervise these volunteers. However, expansion in the MOH HSA network made it possible for MOH HSAs to cover nearly all of these villages. In response PH has oriented the government HSAs to the project activities. The end result is that, in Mulanje, the estate-associated villages do receive at least some of the health education activities that take place on the compounds. Of course, this helps both families that are and are not associated with the estates. Also, the increased emphasis on improving estate clinic services (prevention clinics, ARI case-management, etc.), has benefits to all estate employees and their families, not just those living on compounds.

Fortunately, Project HOPE has carried out a number of censuses of the project target population that helps clarify the situation of on-estate versus off-estate beneficiaries.

	THYOLO	MULANJE
EMPLOYMENT BASED ESTIMATE		
- Peak employment	35,000	20,000
- Members/family	5	5
- Total population	175,000	100,000
COMPOUNDS		
- Total population (survey)	about 37,000	17,803
- Number of households	12,488	5,510
- Population/household	2.9	3.6
- Estate associated - now	71%	80%
- Estate associated - 1996	75%	80%
- Estate associated - ever	82%	82%
- Resident for less than one year	27%	19%
- Resident for one to four years	41%	40%
- Resident for five or more years	32%	41%
VILLAGES	**THYOLO**	**MULANJE**
- Total population (survey 1995)	NA	46,663
- Number of households	NA	11,588
- Population/household	NA	4.0
- Estate associated - now	NA	54%
- Estate associated - 1996	NA	63%
- Estate associated - ever	NA	80%
- Resident less than one year	NA	2%
- Resident for one to four years	NA	6%
- Resident for five or more years	NA	92%

The population living on estate compounds in Thyolo and Mulanje combined appears to be about

55,000. Overall, it appears that two-thirds of peak employment is from persons not living on the estates. It was expected that nearly 100% of estate compound families would report being associated with the estate, but only 80% did. It is not clear if this really means that a substantial percentage of persons living in estate housing have no one in the family employed by the estate or not. Over 50% of village mothers have someone in the family currently working on the estates and 80% have had some association with the estates in the past. This shows the extremely close relationship between the estates and the populations of the villages in their periphery.

Of compound inhabitants about 16- 18% appear to be children under five years of age, while 22% of village inhabitants were children. Average family size is also smaller in estate compounds. The difference may be due to a larger proportion of single adults in estate housing. Although there is variation in the population of the estate compounds from season to season, this appears is relatively small compared to the variation in the total employment on the estates. Estate compound residence is much more unstable than village residence, with nearly all village households living there for five years or more while only 32-41% of compound residents remain for that time in one location.

Mulanje villages associated with estates were selected based on villages which estate management reported as having large numbers of their employees resident and which were physically close to the estates. An initial list of 46 villages was made based on information from Eastern Produce estates and was used in the midterm survey. A shortened and modified list of 30 villages, including some closer to other Mulanje estates is currently being used by the project to better target its efforts. In the April 1996 census these were found to have 35,000 inhabitants.

B. MANAGEMENT AND USE OF DATA

The CSX project has continued the health information system started under the CSVII project in Thyolo, but has undertaken some revisions while considering others. In most cases the project information system builds on and incorporates the standard Malawian health information forms rather than introducing its own forms.

Home based records include an under five card (growth chart, immunizations, vitamin A) a maternal care card for pregnant women, and a TTV card for adult women (though this is frequently lost). All of these are standard Malawian cards and are widely used.

Volunteers in Thyolo formerly kept a monthly tally sheet of health problems for discussion with their HSA. These used pictures for common conditions and cases were ticked off, so they were suitable for use by illiterate volunteers. This sheet was found to not be widely used and has not been supported in the current project. There are still some Thyolo volunteers and HSAs that continue to use this form.

Rosters. In Mulanje volunteers are required to be literate and have been requested to keep a set of three rosters, two for children under five (immunizations and growth monitoring) and one for women age 15-45 (tetanus toxoid immunization). Samples of the rosters are available upon

request from the field. Of the 12 volunteers interviewed in Mulanje, only three had been trained in how to keep rosters prior to May 1996. Of these, one appeared to be keeping the roster up to date and the number registered tallied well with the July 1995 census figures. The second had no children on the register born after July 1995 along with other evidence of failure to update the roster, and did not register any women without children. The third volunteer was in a village with a 1987 census population of 1676 but had registered only 16 children and 6 women. This final volunteer was not being supervised by either an estate or MOH HSA. Many of the volunteers trained in May 1996 were just starting their rosters, but performance again varied widely, with few rosters being kept completely correctly. The most common problems were failure to register all members (especially women) in the target group, misunderstanding of what figures to enter in the weighing columns from the under five cards (past months or coming months), and failure' to update the rosters in terms of new children or new events. In spite of all these problems, most volunteers were in favor of the rosters and many reported that rosters do help get specific children immunized and weighed and in encouraging at least some adult women to go for TTV.

HSA Monthly Consolidated report. This form is meant to give a picture of the activities of the HSA during a given month in each compound that the HSA is responsible for. It is similar to the form used by MOH HSAs to report their activities, but includes a number of additional features. The final evaluation of the CSVII project included recommendations for the modification of this form, which the current project plans to carry out in the next few months. The evaluation team found similar problems with the form as have been noted earlier. One serious problem is that in a certain number of estates it appears that the form is considered to be primarily for Project HOPE use and is not regularly seen or used by the estate medical staff or management. Instead, specific problems are written up as separate notes. Any revisions of the form need to take into account how the form is or is not actually being used by the estates and why.

HSA six-monthly census. Three censuses of compound populations were made during the CSVII project in Thyolo. There have been two additional censuses in the CSX project (May 1995 and April 1996) in Thyolo. In Mulanje Eastern Produce compounds and associated villages were censused in July 1995 and other estates compounds in September 1995. All compounds and a different list of villages were censused in April 1996. From the point of view of Project HOPE, no additional censuses are needed to plan its activities under the project. Censuses have been limited to a count of population by age group, and numbers of houses, latrines, clean water points and other facilities. These show a moderate variability in compound population and give an overview of the sanitary and water facilities available in compounds and Mulanje villages (results presented above).

One estate manager spontaneously reported finding the census useful in planning compound improvements over the next six months. The current monthly house and latrine inspections do not indicate the total number of houses and latrines in the compound, only those inspected and so it is not easy to track housing/facility status based on these. If it is limited to only counting the population the census may have little use, but if other parts of the HSA consolidated monthly form are changed to a six monthly cycle, these could be included in a revised "census". Any revision would have to approved by the estates as something they would use themselves after the

project finishes (see recommendations).

Clinic reports. Estate outpatient clinics all submit the standard monthly OPD record to the district health services. If they carry out family planning activities, under fives clinics and/or antenatal clinics, they submit monthly Family planning and Maternal Child Health reports as well. In addition to reporting to the DHO, OPD records from 1992 onwards have been submitted to Project HOPE and computerized. MCH and FP reports from clinics in Thyolo have been submitted to Project HOPE since late 1995.

Use of data at estate clinic level. At least half of estate medical staff appear to be using the HSA consolidated form and other data on a regular basis. This is often done to check on the workload of the HSA (are they keeping busy enough). Several staff report that they use the numbers of cases of specific diseases in the OPD report to advise the HSA which types of health education talks to give the following month. This is possible in the case of malaria, diarrhea and respiratory infections. More advanced use of the data available was not observed during the mid-term evaluation. Medical staff were asked to provide information, if available, on the effect of the overall project on measures of morbidity (as measured from OPD figures) ambulance use, compound conditions, etc. A few were able to give exact figures of changes but most do not keep track of such figures as part of their job.

Collection and use of data at estate management level. Decisions regarding improvements in latrines, housing and water supplies are made by estate management and so all estate managers know about these aspects of the work of the HSAs. They may also hear about need for spraying or ground clearing. Most managers report that without the HSAs such matters would not come to their attention, or only when the situation becomes critical. Estate managers are, by and large, less familiar with the other work of the HSAs, such as health education talks or assistance with preventive clinics, since these do not have any additional cost to the estate. Some managers take a personal interest in all aspects of the estates, and will review the monthly medical reports in detail.

Estate managers are concerned with all the business aspects of the estate, including all aspects of "staff welfare" (housing, water, health care, education, etc.). Most senior managers are able to estimate the costs of the estate medical system and the proportions attributed to staff, drugs and transport. They keep track of worker productivity, sick leave and absenteeism, but found it difficult to link changes in these to the work of the estate health system, although most had the impression that the impact was beneficial.

Eleven of the fourteen estate managers interviewed said they had not received any feedback from Project HOPE on the health status of people on the estate or on the status of project activities. This is due to the fact that most of the managers interviewed work at the individual estate or division level while most communications and reports by Project HOPE are made to the company level. Since the understanding and support of the middle level managers is important for project sustainability, Project HOPE should try to ensure that they receive copies of any HIS feedback done.

Proiect HOPE collection and use of data All the information from the monthly HSA reports and from monthly OPD, MCH and FP reports are entered into computers under EPIINFO at the Project HOPE Thyolo and Mulanje offices. This is used to generate tables and graphs looking at changes over time in a single indicator (such as the rates of specific diseases in the OPD), comparisons of an indicator between estates or divisions (such as rates of health education output between the EP estates) and total outputs over longer periods of time. These summaries have been used for Project HOPE internal reports, for reports to the estates and at the quarterly meetings of HSAs.

While there has been positive outputs of the computerized project HIS, there are a number of concerns.

- Almost all outputs are in terms of numbers of activities or other units rather than rates or indicators. This makes interpretation of the numbers difficult (e.g. Is the result good or bad? In comparison to what?). To some extent the estate staff know their own situation well enough to interpret the numbers without further analysis, but this is often not the case.
- The HIS has not been calculating reporting rates routinely or correcting low reporting. During the midterm evaluation it was found that reporting rates among HSAs in Mulanje was only about 65% in 1995. This has improved to about 75% during the first half of 1996. In Thyolo an average of 20 HSAs reported monthly in 1994, versus about 18 in each of 1995 and the first half of 1996. This compares to about 30 to 33 HSAs active in Thyolo at any one time and implies a reporting rate of only 55-60% in the last two years. The final evaluation of the CSVII project states that 1993 HSA reporting rates were about 85%. Current reporting rates are unacceptably low and make interpretation of the output figures difficult.
- There is as of yet no standard set of tables or graphs that are tracked routinely or provided routinely to Project HOPE or the estates. Even ad hoc reports have not been filed, so it is difficult to know what has been analyzed and presented and what has not. The computer staff report that the Project HOPE field staff make few requests for data analysis or presentation, so that much of what is produced is done by the computer staffthemselves, though they do not know the details of the project or what is medically relevant.
- It appears that much of the data put in the computer has never been presented in any summary format. If it is useful summary tables should be generated. If it is not useful there is no need to computerize it (and possibly no need to collect it).
- Most estates will not be able to continue with a computerized system after the project, but could certainly do a standard set of tables and graphs by hand. The power of the computerized system can be used to investigate which out of a very large number of potential standard tables are most useful to each estate.

During routine supervision, the Project HOPE staff appear to use the paper HSA reports of the last month to review the situation and advise the estate staff and HSAs. This is a good use of the

current system, but again makes no use of the computerized system.

C. COMMUNITY EDUCATION AND SOCIAL PROMOTION

Because it is building on an already existing and sustainable curative service base, the Child Survival project in the estate setting is focused mainly on health promotion and social mobilization rather than direct service provision by PH staff This was especially true for the CSVII project in Thyolo, but the CSX project has shifted emphasis to also include some strengthening of service provision by the estate medical staff, both in terms of increased numbers of preventive clinics and improved quality of care for specific conditions. The main method for health promotion has been through health talks given to groups of residents by HSAs in compounds. Additional methods for health promotion have been similar talks given by compound resident health volunteers, some individual counseling for specific families, and talks given at various clinics, such as for under fives. The quantity, coverage and topic areas of the compound/clinic health talks are given elsewhere in this report.

The use of printed materials in health talks by HSAs is fairly limited. All materials used under the project are from the MOH so that the messages and approach are consistent with MOH policy. The most commonly available materials are posters related to HIV control or family planning. These are used frequently. In order the ensure consistency of messages Project HOPE has trained nearly all the project associated HSAs itself and has frequent meetings with and supervision of HSAs in the field. In addition, talks given by most HSAs were tape recorded in 1996 in order to review content and teaching methods (see section on Quality). This review showed that in addition to straight talks, most HSAs used some question and answer techniques when presenting information and many used songs and answered questions from the participants.

Community groups interviewed during the mid-term evaluation were asked what techniques their HSAs or volunteers had used during health education activities. Nearly all groups had attended health education talks. About half reported that the sessions involved back and forth discussions and most reported that the HSAs sometimes used posters or other visual aids. Over half reported songs, usually at the beginning or end of a session as a communication technique and a few had dramas or plays in their compound (although this was usually done by a special drama group from the estate or the district).

It appears that there is some attempt to use traditional and participatory methods in health promotion, although the most consistent method is still the health talk. It is not possible to determine the effects of different methods of health promotion on the level of learning.

D. HUMAN RESOURCE FOR CHILD SURVIVAL

PROJECT RELATED PERSONNEL

The project personnel consists of Project HOPE's own staff, the pre-existing medical staff and other staff of the estates, Health Surveillance Assistants hired by the estates under the project and

health volunteers from the compounds and villages. Others, such as compound watchmen, dorm leaders and ministry of health staff have been associated with the project. The general characteristic is that estates employ all staff that are meant to continue after the project leaves.

Project HOPE staff relevant to the project includes:

Country Director - Currently responsible for several ongoing projects. Only a portion of his time is for support of the Child Survival Project.
Child Survival Coordinator - full time
Senior field trainer/supervisors (two - one each in the Thyolo and Mulanje offices)
Field trainer/supervisor/family planning specialists (two - one each in the Thyolo and Mulanje officers)
Head of HIS
Data entry clerks, secretaries, drivers

Existing estate staff relevant to the project include:

Estate management. Each estate has its own management structure, with responsibility for decisions relating to participation in the project, hiring of medical staff/HSAs, administrative and technical supervision of HSAs divided in different ways.
Estate medical staff Nearly all estates (or groups of estates in a single company) have a clinic staffed by a Medical Assistant (occasionally by a Clinical Officer) and/or by Enrolled nurse/midwives and dressers/assistants. The exact arrangement varies between estates and over time.

Health Surveillance Assistants are a standard community outreach worker in the Malawi medical system with a nominal coverage of 2000 population. The role of the HSA originally concentrated on rural sanitation and reporting of disease outbreaks, but has expanded to include a wide array of disease prevention activities and some limited curative functions in some settings. HSAs should have a minimum of 8 years primary education and 8 weeks basic HSA training. Under the project participating estates were requested to employ HSAs for compound health education and sanitation activities. Estates were free to employ the number of HSAs they wished, but on average there is one HSA per "estate" or large "division" Currently there are 35 HSAs employed on estates Thyolo (with several posts vacant) and 18 employed on estates in Mulanje (with no posts vacant, but one HSA is working primarily as a dresser which interferes somewhat with his HSA work). Population coverage per HSA averages about 1000, but varies from about 400 to over 2000, and varies between seasons. HSAs cover an average of six compounds each.

There is a moderate rate of turnover in HSAs. Of the 36 HSAs starting work in Thyolo from 1991 through 1993, 16 (45%) have left or been relieved and have been replaced (average tenure of about two years). None of the replacement HSAs from 1994 through 1996 have left. In Mulanje two of the original 19 HSAs have left and replacements have been selected. Overall, turnover may be about 10% per year. While this is not very high, it shows a need for estates to be able to arrange training of new HSAs on occasion (since government HSAs are better paid and are unlikely to accept work on the estates). Sending HSAs to the government HSA training centers, as was done for some HSAs in 1995 is probably the most practical solution. They would

still need orientation to the specific estate work, but this can be done in most cases through apprenticeship with the remaining HSAs.

Volunteers were selected by their communities and trained by PH in both Thyolo and Mulanje. Usually one or two volunteers were selected per compound for a total of nearly 300 in Thyolo and 192 thus far in Mulanje. In Mulanje, two volunteers are also being trained in each of 46 villages near estates that have a substantial number of estate employees among their residents. Population per compound ranges from very small compounds with as few as 20 inhabitants to the largest with over 700 (average about 170), while the populations of the villages near estates in Mulanje ranges from 400 - 2600 (average about 1,000).

Comnound watchmen and dorm leaders. It is standard practice on the estates to have a hired watchman (always men) living in each compound to ensure security while workers are away in the fields and to have a dorm leader for workers dormitories. Both of these types of staff have or will receive a one day orientation to HIV prevention under the project.

Ministrv of Health staff have been involved at the district level as trainers of estate medical staff, HSAs and volunteers in both Thyolo and Mulanje. MOH HSAs are supervising project trained volunteers in villages near estates in Mulanje. In the original project design, estate HSAs would supervise many of the nearby village volunteers due to the absence of Ministry of Health HSAs. However, the number of Ministry of Health HSAs has increased and are taking over nearly all of this task.

Adeauacv of personnel. The ratio of Project HOPE staff to estates, to estate medical workers and to HSAs allows for adequate training and follow-up of project activities. Depending on the estate, medical staff may have from one up to seven HSAs to supervise. Although there are enough estate medical staff to supervise HSAs their training, orientation, other responsibilities and/or transport limitations sometimes make it difficult for them to do so (see supervision section). The number of households, compounds and volunteers to be supervised by each HSA inevitably varies a great deal, since they are generally assigned to a single estate, whatever its size. In general, HSAs working for the estates have no difficulty covering a routine round of visits to all compounds, including health education talks, routine house inspections, help with estate clinics and other activities. Those with larger target populations can simply do the rounds of visits less frequently. Volunteer work, with the exception of keeping rosters should not be very time-consuming, but rosters may be difficult for those in the largest compounds or villages.

COMMUNITY VOLUNTEERS

Selection. incentives and workload, Volunteers under the CSVII project in Thyolo were selected by communities on the basis of their interest and willingness to help with health activities. Volunteers were trained in six intervention modules of one day each. Due to irregular timing of drop-outs, recruitments, trainings and a severe drought one year that led to large scale worker lay-offs, the number of volunteers having completed five or six modules was only 50% at the time of the final evaluation.

Selection criteria and job descriptions were revised for CSX and applied to the recruitment and training of volunteers in the new estates in Mulanje. This included the requirement that volunteers be associated with "permanent staff' rather than casual labor and that they be literate so they could work with rosters of under-five children for EPI and growth monitoring and of child bearing age women for TTV. Training is in seven or eight one-day modules and is still ongoing.

Other than "lunch allowances" received during their training volunteers do not appear to receive any material incentives from the estates, the communities or Project HOPE. Recognition and moral support from the community and supervisors varies, occurring in some communities and estates and not in others.

Volunteers in Mulanje are to help organize people for HSA group health talks but are not expected to give talks on their own. Instead they help identify persons needing follow-up based on their rosters. It is hoped that this will results in greater stability of the volunteers and more focused work activity. Both types of volunteer were asked if they had enough time to do the health work expected of them. All Mulanje volunteers said yes while three of nine Thyolo volunteers thought their workload too large.

Dropout rates. Initial dropout rates in the CSVII project were high, at least partly due to large numbers of families leaving the estates during the drought of 1992. Drop-outs from 10/92 to 10/93 were 32%, while they fell to only 8% for the 10/93 through 6/94 period. In Mulanje 202 volunteers were trained between October 1995 and May 1996. Ten volunteers from the initial training dropped out immediately but this was a problem with recruitment. During the mid-term evaluation, 6 Thyolo HSAs and 8 Mulanje HSAs were asked how many volunteers they should be supervising and how many had become inactive. Thyolo HSAs report they should supervise an average of 10 volunteers each, but report that over 50% have either dropped out or become inactive. Some new volunteers are recruited spontaneously by the compounds and HSAs. In Thyolo, three of the nine volunteers visited had been recruited tier the end of the CSVII project and had not received any project training. Mulanje HSAs supervise an average of 7 volunteers and report that about 25% have become inactive. This appears high compared to how recent their training has been, but many of the volunteers were selected early in 1995, well before they were trained, and this may account for the dropouts.

PROJECT TRAINING

Trainina assessments Project HOPE has attempted to consciously adapt its training to the needs of the trainees. There has been a formal process of evaluating current knowledge and modification of course content prior to training for HSA reorientation in Mulanje, for HSA refresher training in Thyolo and for the training of Compound Watchmen and Dorm leaders (upcoming). Pre-tests and post-tests are standard in training courses. HSAs have been trained to MOH specifications and receive certificates from the National HSA Training Coordinator.

In general, the project training work appears to have been successful in promoting project

objectives. For example, even though the Family planning orientation for medical workers was short, it has resulted in many opening family planning services on their estates. All medical staff visited were satisfied with the quality of work of their HSAs and only three recommended additional training (in health education skills).

Training table is available upon request from the field.

E. SUPPLIES AND MATERIALS FOR LOCAL STAFF

The only item supplied by the project is training materials and stationary. Medical supplies either come from the estates in the case of curative services or from the district health services in the case of vaccines and family planning supplies. There was a national interruption in DPT and operational support for outreach clinics in 1995, and family planning supplies are not always regular, but these problems have not greatly interfered with the project and are beyond its scope to control. The stationary needs of volunteers after the project can be met with blank exercise books and the needs of the HSA are minimal, so these should not be a problem.

F. QUALITY

Household knowledge This is assessed mainly through household surveys at baseline and mid-term (and planned for end of project). Results are given under each intervention. The ARI study (below) also assessed mother's prior home care of children who eventually are referred for ARI treatment.

HSA/volunteer knowledge and skills The mid-term evaluation team evaluated the knowledge of 14 HSAs and 2lvolunteers in the areas of HIV, Family planning, vitamin A, ARI, malaria, diarrhea and sanitation. In general, HSA knowledge levels are considerably better than those of volunteers. Results were given under each intervention above.

HSA health education activities. Project HOPE staff make about monthly visits to HSAs in Mulanje and sometimes observe them giving health education talks. This is done less often in Thyolo since estate staff are meant to be taking over most supervision work. In order to make such observations more complete and systematic, Project HOPE, in 1996, hired observers to make recordings of health education talks given by HSAs. English transcripts of the talks were reviewed briefly during the mid-term evaluation. The general impression was:

- Only a few factual errors were found in all the talks
- The transcripts record most sessions as straight talks, but a number of sessions included questions and answers between the community and the HSA. Apparently songs at the start or end of sessions were not noted in the transcripts. Many of the community questions involved misperceptions, which the HSA was able to correct, such as worries about side effects of family planning (e.g. infertility) and the whether one can get Malaria through the skin pores of someone else infected with Malaria.
- A number of talks made good links between interventions, such as reminding the audience that

immunization is a good way to prevent ARI

Clinic staff knowledge and skills With the help of a consultant, Project HOPE conducted an evaluation of home and health worker management of children with ARI. This involved interviews with 99 mothers who had brought children for treatment of ARI to determine home care practices and delays in treatment, and a review of knowledge and practices of 32 estate health care providers (13 of which were observed providing care). Conclusions included that home treatment for severe ARI was common, often included ineffective or potentially dangerous items and waiting for the home treatment to take effect. This often led to delay in bringing the child for treatment (only 27% came within one day of a danger sign developing and only 59% within two days). Health workers showed better knowledge of correct assessment and treatment of ARI on questioning than on observation (only 4% of cases had breathing rate counted). Most would benefit from strengthening or updating in the management of ARI, as well as fever and diarrhea.

Pre-Training assessments Pre-training assessments were used to design training sessions for HSA refresher, new HSA orientation, compound watchmen training and dorm leader training. This is an improvement over the usual use of pre-tests, which simply document knowledge levels at the start of a course, but do not leave adequate time for revision of training content.

G. SUPERVISION AND MONITORING

Supervision under the Child Survival project builds on the current estate personnel system. The key element for sustainability of the project is turning over supervision of HSAs from Project HOPE staff to estate medical staff and estate management. This is needed to maintain the skills of the HSA, to ensure that the HSAs work continues to be oriented to estate priorities, and so that the estates do not depend on Project HOPE to tell them if their HSAs are doing an adequate job. If the estates cannot take on this function themselves, an outside agency will need to carry it out. The Ministry of Health does occasional monitoring of estate medical services, but this has not extended to HSA work. Extending MOH oversight to HSAs would probably need to be limited to offering training courses when they are held for non-estate HSAs. Other alternatives for oversight after the project are discussed under sustainability.

An evaluation of supervision under the project was carried out from June - September 1994 as part of the CSVII activities in Thyolo. At this time, Project HOPE supervisors visited each HSA about once a month for an hour or more at a time, as well as holding quarterly meetings with all HSAs. Project HOPE supervisors were found to use supportive techniques well (allowing time for the HSA to talk, praising good performance in front of others, reserving corrections for later, demonstrating good health education, etc.). However, use of the HSA consolidated form and a supervisory checklist in supervision was limited, and feedback during a subsequent visit on issues that came up during a previous one were weak. Estate medical staff mostly reported supervising HSAs frequently (nearly all at least once monthly). Twenty four of the 29 Thyolo HSAs were interviewed at a quarterly meeting. About two-thirds reported being supervised by estate medical staff but only two reported being visited in compounds while they were working. Many of the

HSAs at this meeting had concerns that without Project HOPE the estates would not value their work, they would not receive further training or opportunities for quarterly meetings, and that medical staff would only be concerned with activities at the clinics.

The conclusion was that, although estate medical staff would mostly have the time and resources to supervise HSAs, many did not have the orientation or skills to do this as well as Project HOPE staff In response a guide to supervision was prepared, which includes a general supervision guide, a series of 19 quality checklists covering most HSA jobs, and a bi-annual assessment. The guide was meant to be used in a "notebook" format and was presented to estate medical staff during a two day training in May 1996.

Supervisors were asked to test use of the forms prior to a follow-up meeting. The September review meeting showed that three-fourths of the supervisors had used the notebook, all of whom and found it very useful, but many found it time-consuming and difficult as well. A one day training, attended by 15 medical staff and including a field practice was used to reinforce use of the notebook.

Project HOPE staff as supervisors. At the time of the CSX mid-term evaluation, Project HOPE supervision techniques were reviewed by questioning Project HOPE field staff and 14 HSAs. Project HOPE staff report that the general rule under the CSX project has been to avoid directly supervising HSAs in the absence of the estate supervisor. The correct procedure is to go to the clinic, pick up the estate supervisor, and carry out joint HSA supervision. Only when there is no estate supervisor (which happens occasionally when there is only a dresser at a clinic) or when the estate supervisor is busy or absent should they go directly to visit the HSA. In the case of Mulanje, it appears that a schedule of monthly visits to each HSA is still followed (training duties permitting) while in Thyolo routine supervision has been scaled back and most visits are made for special purposes only.

In practice, it appears that Project HOPE staff have difficulty routinely taking estate medical staff with them to see HSAs work in the compounds, although they may see the HSA together at the clinic. Project HOPE supervisors do not keep a written log of activities or an estate by estate evaluation of the supervision situation, so it is impossible to quantify the nature of this relationship.

Fourteen HSAs were asked whether their Project HOPE supervisor visits them more or less frequent than their estate supervisor. Five of eight Mulanje HSAs but none of the six Thyolo HSAs report that Project HOPE supervision visits are more frequent. This is compatible with the lower profile Project HOPE is taking in Thyolo and with the lack of supervision training of the Mulanje estate staff Two Thyolo HSAs complain that they are never supervised by Project HOPE anymore. If they are adequately supervised by the estate, though, this is not a problem, but simply a part of the transition to full estate responsibility. Project HOPE staff were reported by the HSAs to give advice, check workplans and report forms, observe the HSA working, do joint inspections, ask about problems and encourage the HSAs. All but one HSA reported that the Project HOPE supervisor does not do anything in addition to what the estate supervisor does.

Besides supervision on the estates, Project HOPE holds quarterly meetings with the HSAs. The most recent meeting in Thyolo was in April 1996 and focused on how to collect data for the compound census and reminded HSAs that Project HOPE would be leaving in less than two years.

Estate medical staff as supervisors. As part of the mid-term evaluation eleven estate medical staff supervising HSAs (six from Thyolo and five from Mulanje) were asked about their supervision of HSAs. All but one reported reviewing both the monthly workplan and consolidated report every month, going at least monthly with HSAs to the compounds and observing the HSA work in the clinic. All report having visited their HSA in the compound within the month prior to the interview (three of whom went with Project HOPE stat?). Three reported watching a health talk and one reported following up on a patient but seven did not specify any content of the visit and none used a supervisory checklist. Half have problems with supervision in general in terms of lack of transport, time or staff. Only three of six Thyolo staff had ever used a supervisory checklist even though all were familiar with it and all but one had received the training.

Of the 14 HSAs interviewed, three do not have a medical staff supervisor on their estate. Of the eleven remaining, only eight report that their supervisor regularly reviews their monthly workplan with them or counsels them on their work, only six say the supervisor regularly reviews the monthly consolidated form or goes to the compounds to solve problems or observe their work. Rates are similar in Thy010 and Mulanje. It appears that some medical staff overestimate the frequency of their oversight of HSA work.

HSAs as supervisors Of 21 compound volunteers interviewed, all but one had been visited by their HSA within the last month, although in most cases the content of the visit was "giving a health talk" or "inspecting houses" rather than specifically supervising the volunteer. This may change with the introduction of rosters for volunteers in Mulanje.

H. REGIONAL AND HEADQUARTERS SUPPORT

Most technical issues related to the project are discussed extensively between the Project HOPE country office and Project HOPE headquarters. For example, the draft Detailed Implementation Plan, draft survey instruments and draft protocols are routinely submitted to headquarters for technical comment prior to finalization and use in the project.

I. PVO's USE OF TECHNICAL SUPPORT

Technical support for child survival activities have included:
HSA training - Conducted with assistance of the DHO Mulanje and regional HSA training officer of the MOH.
HSA refresher training - Designed and led by Mr. C.Q. Nyirenda, Public Health Tutor of the Lilongwe School of Health Sciences.
Focus groups on family planning - Mrs. A. Chimwaza, Vice Principal, Kamuzu College of Nursing.

Family planning training - Assisted by Mrs. Kaforzi, family planning trainer at the regional health office.
ARI assessment - Dr. Lynne Miller France, Consultant
Training for Transformation - Designed and led by Project HOPE's HIV/AIDS project team (Mr. F. Phiri, Mr. Y. McKennedy and Mrs. R. Banda), Lilongwe
Training for PH staff in participatory learning and focus group methods Lisa Peterson MPH, Intern.
Liaison with estate counterparts Dr. Elizabeth Miller, Estate Medical Adviser.

J. ASSESSMENT OF COUNTERPART RELATIONSHIPS

Estates as counterparts. Interviews with senior management show that most remain enthusiastic about the project, and report that Project HOPE always keeps them informed by letter of any activity planned on their estate. With limited exceptions the estates have kept to their side of the project agreements, hiring and maintaining HSAs, repairing bicycles and now providing transport for quarterly meetings or training sessions. Middle management, including managers for specific estates in the large companies do not receive direct communications from Project HOPE and seem to be less acquainted with the project and receive less feedback on results. Most are again very supportive of the project but would like to hear more about it.

Estate medical staff are the strongest supporters of the project, All think that the system established is effective in improving the health of compound residents and all would recommend hiring replacement HSAs. Estate medical staff report frequent visits by Project HOPE staff but many do not report receiving information feedback. Starting in 1996 Project HOPE has included estate medical staff in its quarterly meetings with HSAs to increase their level of involvement.

District Health Offices Representatives of the DHO in both Mulanje and Thyolo were interviewed as part of the mid-term evaluation. The Mulanje group included the District Health Officer, Matron and Public Health Nurse (the district Environmental Health Officer, responsible for HSAs was a member of the mid-term evaluation team). The Thyolo group did not include the District Health Officer (who had just finished his contract) but included the acting DHO, the acting Matron, the MCH coordinator, district tuberculosis officer (associated with the HSA program), and others.

Mulanje reports a high level of involvement in the project, including assistance in the training sessions, good feedback of quarterly and activity reports from Project HOPE and a high level of support to estate medical services (quarterly visits to each estate and support of prevention clinics). Overall the Mulanje office finds the project interventions effective and will do what it can to help them continue.

In contrast, the Thyolo team knows of the general content of Project HOPE activities, but complains that they are not kept well informed of what Project HOPE is doing and are not involved in planning or implementing project activities. They also make periodic visits to the estate clinics and support prevention clinics but say that this does not include review of what

HSAs are doing.

The contrast between the two districts is not surprising since the CSVII project operated very much independently of the DHO in Thyolo. The CSX project attempted to involve the DHO team more heavily, and this is especially needed for work with villages off the estates in Mulanje. Part of the difference in responses to the evaluation may be due to the absence of the DHO in Thyolo, since most project communications go through the DHO and other members of the district health management team may have felt that they were not kept well enough informed. In any case, work is needed to improve relations with all members of the Thyolo district management team.

Ministry of Health A Regional Health Office representative was on the evaluation team and reported that Project HOPE's relations with the RHO and the central Ministry of Health are very good. There are routine meetings to share plans and information with the RHO and standard MOH materials are used for training materials, the information system, health education and protocols whenever these are available. In addition, Project HOPE sits on the national Safe Motherhood task force involving the Ministry of Health and the National Family Welfare Council and has an advisory committee for the Project HOPE MotherCare funded maternal anemia project with participation of the MOH, CIDA and UNICEF.

K. REFERRAL RELATIONSHIPS

Referral relations for all Project HOPE intervention areas are straightforward. For curative services the first point of referral is the estate clinic which provides first aid, minor treatments and a limited number of antibiotics. Most estate clinics do not have beds. Physical access to estate clinics is good for ambulatory patients. More severe cases are referred by the estate medical staff to the district hospital. Nearly all estates have a functioning ambulance or vehicle used for this purpose and in most cases trips to the district hospital are made almost daily. Patients can be picked up near home if they cannot come to the estate clinic. This makes transport of severe cases much easier for estate employees and their dependents than the general population. District hospitals have better qualified staff but have problems of overcrowding and shortages of essential drugs and supplies. This was especially severe during 1995 but has improved in 1996, with the exception of continuing problems with national drug procurement. Correction of district hospital problems is beyond the scope of this project.

Preventive care services are available from fixed clinics and mobile outreach points both on and near the estates. In general, physical access is good and continued to improve for family planning and antenatal care services, with Project HOPE assistance. Except for disruptions of immunizations in 1995, supplies are fairly reliable.

L. PVO/NGO NETWORKING

Project HOPE meets regularly with other PVOs involved in health activities in Malawi, including Save The Children USA, ADRA and IEF. Project HOPE staff have visited the SCF USA field

site to discuss use of volunteers and SCF visited the Project HOPE impregnated bednet study site. There is a monthly NGO meeting at the Regional Health Office for the South so that the RHO is familiar with the activities of the NGOs (and NGOs of each other).

M. BUDGET MANAGEMENT

The Project Pipeline Analysis as of October 15, 1996 is attached in the annex. This shows that about half of total project funds had been expended in the first 20 months of a 36 month project. Given that some expenses for equipment are expected more at the start of the project, there may be a small to moderate degree of underspending by the end of the project. Since it is recommended that some project activities be extended, at least in Mulanje, for an additional year to promote sustainability, this should not be a problem.

V. SUSTAINABILITY

FINDINGS

During the mid-term evaluation, estate managers, medical staff and HSAs were asked a number of questions related to project sustainability. Nearly all the managers interviewed found the project useful and have a general intention to keep the system of HSAs going after the project is completed. Specific actions mid-level managers would support include:

- Continue paying the HSA - all
- Replace any HSA that leaves - all
- Repairing HSA bicycle - all
- Replacing HSA bicycle - 13 of 16 (some specify that stolen bicycles cannot be replaced)
- Copying forms needed for information systems - 13 of 16 (others say “maybe”)
- Providing transport for HSA supervision by medical staff - 13 of 16 (only one “no”)
- Providing transport for volunteer/HSA training once or twice a year - 15 of 16
- Paying tuition for HSA refresher training - 8 “yes” - others don’t know or say it depends on the cost and decision of senior management.
- Use estate transport for pick up of preventive clinics supplies - 15 of 16 (most estates already do this)

The most common solution offered to the problem of training new HSAs is to send them to the standard MOH training courses (15 of 16 agreed with this idea), with other managers recommending apprenticeship with current HSAs. About half of managers agreed with the idea of having their own medical staff assist as trainers of new HSAs working with other estates, but others still preferred the MOH route, since this would take their staff away for too long a time.

Thirteen of sixteen managers felt that the estate medical staff could provide adequate supervision of the HSAs once Project HOPE leaves. All managers felt that HSAs would require periodic retraining to remain effective. About half looked to the MOH to provide such training, two

thought estate staff could handle this while others did not have ideas on how training could be done.

Most estates believe that they are already supporting most project costs and half feel that they will have little difficulty paying for continued activities after the project finishes. The other half mentioned a variety of potential problems, all related to the very tight financial situation of the estates. These include difficulty paying for training, for a new bicycle, for enough supervision, for transport, and fears that estates will not be able to retain HSAs due to low pay. (I-ISA pay on the estates ranges from MK 286 - MK 550 versus about MK 700-800 for government HSAs. Increased pay for HSAs is unlikely since it is tied to overall estate salary scales).

Managers had a variety of suggestions for what Project HOPE can do to make the transition easier, including:

- Liaise closely with top management (5)
- Intensity training (supervision, data interpretation, refresher) (8)
- Identify someone to take over (e.g. NGO, MOH) (2)
- Submit a report on successes and failures (1)

Estate medical staff responses were similar to those for the estate management. All medical staff interviewed thought that they could carry out routine HSA supervision. All thought that HSAs would need continued training but only two of eleven thought they could do this themselves, with seven mentioning the MOH as a potential source for training.

All but one medical staff interviewed felt that the estate will continue project activities after Project HOPE leaves, but one noted that when staff turns over continuity is difficult. All of the medical staff interviewed think the HSA/volunteer system is effective in improving health on the estates and would recommend replacement of any HSAs that leave. Thyolo staff noted that Project HOPE carried out supervisory training to help them with the transition and Mulanje staff requested this training as well.

In contrast to the managers and medical staff HSAs had a much more mixed view of the sustainability of project activities. Only seven of fourteen thought their work could be sustained when Project HOPE leaves, while four thought it would not be and three were not sure. Those who thought their work would not be sustained reported that they felt the estate management does not value the work of the HSAs or will not provide supplies, transport or training to keep it going. Three of the four pessimistic HSAs work on Mulanje estates which have had HSAs working for between one and two years, compared to five years in Thyolo.

SUSTAINABILITY PROGRESS

The project has a number of specific indicators to measure the process of estates taking on full responsibility for sustainability of the child survival activities. The status of each indicator is given in a table that is available from the field upon request. In general, while some progress has been

made towards the project sustainability goals, this has moved more slowly than planned and some tasks may need to be modified.

For example, the problem of volunteer dropout was meant to be addressed through training of compound health committees and by having estates train their own volunteers. At mid-term it was seen that estates have not supported the idea of compound health committees to avoid the potential for other labour problems, and only a few estates seem willing to take over the expense of training their own volunteers. The solution in practice has been to drop the idea of health committees and have volunteers work closely with compound watchmen instead. Project HOPE can help those estates that are willing to train their own volunteers, and provide orientation for HSAs in other estates in how to work in compounds that do not have volunteers (which many do already).

The other major difficulty is with Project HOPE's initial plan to have estates hire a "public health advisor" to help with those few activities that the estates cannot handle themselves, such as periodic training of HSAs and those aspects of the HIS which compare estates and assess how their services are doing from an independent vantage point, One important role of an outside agent is to provide reminders to senior estate managers who might otherwise allow the HSA system to decline through attrition and lack of attention.

The idea of an advisor was received positively by some estate managers in 1994. A budget for such an advisor was drawn up by Project HOPE and presented to a meeting with senior managers in April 1996. The total cost was estimated to be somewhat less than the'current cost of all the HSAs' wages. The estate managers felt that the cost could be met, but could not agree on jointly hiring someone due to problems with accountability to each estate. There may also be worries whether such an advisor would be able to provide the quality of oversight that Project HOPE has and whether the costs would be kept low or would escalate with time. Just after the midterm evaluation data collection in June 1996, the estates agreed to support start-up of a local NGO that would be contracted to carry out support of the estate medical system (including HSAs), while at the same time attempting to obtain funding for other projects both on and off the estates. Full costs of such an NGO would be too large for the estates to support themselves.

The role of the MOH in sustainability is important but also limited. Already the MOH has an important support role in the operation of the prevention clinics on the estates and most estate medical staff are originally trained in MOH schools. In Mulanje, some of the HSAs received their basic training from the MOH rather than Project HOPE staff. This was fairly successful, although these HSAs needed some additional orientation to the estates and some of the project interventions. After the project the additional orientation would have to come from the estate medical staff The MOH has no system of refresher training for HSAs, and other than occasional general supervisory visits to estate clinics by senior district health staff, does not have an oversight system comparable to Project HOPE's quarterly meetings.

COST RECOVERY

Cost recovery plans under this project have been limited to switching from condoms freely provided through the Ministry of Health to "social marketing" of brand-name condoms at a heavily subsidized price (about one cent US each). The social marketing organization in Malawi is Population Services International, which has worked with estates in Thyolo. Of six Thyolo estate clinics reviewed, one reported still giving free condoms, two sold "Chishango" condoms, two were supposed to be selling condoms, but had not worked out the administrative methods to do so, and one was out of condoms. At this point the switch to marketed condoms has proven to be difficult, at least in part because most estate clinics do not charge for any services and so are not set up to be responsible for money management. The role of Project HOPE is limited to facilitating contact with PSI, so resolution of this issue depends more on PSI providing estates with better methods to market condoms than on Project HOPE.

vi. RECOMMENDATIONS

Recommendations of the mid-term evaluation are divided into the following categories

- Project Design
- Project Interventions
- Health Information System
- Supervision
- Training
- Sustainability

PROJECT DESIGN

Several minor changes have occurred in the technical design of the project compared to the DIP and others are recommended at this time.

ROSTERS. Rosters of children under five for immunization status and growth monitoring, and of child bearing age women for TTV immunizations status have been introduced for compound/village volunteers in Mulanje. Although the evaluation team considers this experiment promising, most volunteers had only started work a few weeks ago and so it was impossible to evaluate the rosters adequately. Recommend continuing this experiment in Mulanje with modified rosters (see HIS recommendations).

MULANJE VILLAGES. The extension of project activities to villages surrounding the estates in Mulanje was based on the premise that a large percentage of estate employees live in villages and are not served by Ministry of Health HSAs. While the project has found the first premise to be true, the recent expansion of the MOH HSA network means that very few villages near the estates are now unserved by a MOH HSA. The evaluation team noted that Project HOPE had adjusted to this situation by working with MOH HSAs in these villages and recommends that this continue.

Sustainability of HSA/volunteer health education activities in villages depends on the MOH rather than the estates.

VOLUNTEERS. The evaluation team discovered that half or more of volunteers in Thyolo compounds have either dropped out or become inactive. Given the difficulties with volunteer motivation, the team recommends that rather than recruiting and training new volunteers in all compounds, the project focus during the remaining time on two approaches:

- Training current Thyolo HSAs how to motivate or remotivate their current or inactive volunteers, how to carry out their work effectively without volunteers if necessary, and, if rosters appear effective in Mulanje, how to use rosters themselves or with their volunteers.

- Providing technical assistance to those estates and those compounds that are willing to support their current or new volunteers, but on a basis of the estate taking most of the financial responsibility for training (Conforzi and Satemwa estates may be willing to do this) and compounds accepting some responsibility for motivation.

VOLUNTEER MOTIVATION. Estates should be requested again to look for ways to motivate their volunteers, and communities wishing to have volunteers need to carefully consider their own responsibility for maintaining the volunteer's motivation. Financial or material incentives are considered unlikely from either side, but non-material incentives should be encouraged to the extent possible.

HSA JOB MIX. Some HSAs appear to spend excessive time on repeated household inspections for hygiene beyond what is useful to the estate in keeping up with compound conditions. Others are not working well with their volunteers. Recommend trying a revised mix of work with selected HSAs in Thyolo and Mulanje in which house to house visits will be expanded to include checking of under five cards (and rosters) and health education in addition to sanitary inspections. This is more time consuming, but is made up for by visiting fewer houses each month. All houses would still be visited and inspected on at least a twice yearly basis with exact frequency depending on numbers of houses covered by the HSA and level of assistance from volunteers. HSAs should be reminded of the importance of and methods for involving volunteers in their compound work. Group health education and other routine HSA work would continue, but HSAs would be encouraged to shift emphasis from 40% of sessions related to diarrhea, hygiene and sanitation to a more even approach and specific changes in messages (below).

PROJECT INTERVENTIONS

1. IMMUNISATION - See HIS recommendations

2. CONTROL OF DIARRHOEAL DISEASES - No changes recommended

3. NUTRITIONAL IMPROVEMENT

The evaluation team notes that Nutrition clinics are likely to cease in Thyolo and Mulanje either in early 1997 or early 1998 with the elimination of food commodity support by the World Food Programme. Nutrition messages may need to be modified to take this into account and emphasize home production of suitable weaning foods.

The team agrees that medical staff are themselves often not convinced of the benefits of exclusive breastfeeding during the first four months of life, and recommends that estate medical staff who supervise HSAs or are otherwise giving nutrition advice to mothers receive the MOH three day intensive training in breastfeeding.

Project HOPE should check the MCH monthly reports from all estates with under-five clinics. If any have not checked "yes" in the "Enough Vitamin A" space PH should check that these clinics have adequate supplies of vitamin A. There is some concern that some estate clinics do not have vitamin A capsules even though there are adequate supplies in the MOH system.

4. MATERNAL CARE - no recommendations (See below for FP recommendations)

5. CASE MANAGEMENT OF ACUTE LOWER RESPIRATORY INFECTIONS

The study of ARI practices and reasons for delays in bringing children to treatment has been completed. Recommend going ahead with training of estate medical staff in standard ARI case management, either by itself or combined with treatments of other common and important childhood illnesses.

Recommend including advice against home treatment with antibiotics of ARI as part of ARI health education. Antibiotics are readily available for purchase in markets.

6. CONTROL OF MALARIA - No changes recommended

7. HIV/AIDS and FAMILY PLANNING

Many of the activities in these components have already been completed. The remaining activities planned in the DIP should be completed, but these can either be funded by under the CSX project or under the newly started STAFH project, which covers the same technical and geographic areas. In particular:

- Estate medical staff and the evaluation team agree that Community Based Distributors of contraceptives would be welcome at the compound level even though current family planning services are reasonably accessible to estate populations to increase consumer demand.

- The number of medical staff to be trained in-depth as FP providers should be increased from the planned four (of which one is already trained and one in process). The exact number depends on a review of the situation on each estate. The team recommends that if a large number of providers are found to be potentially benefiting from training, that Project HOPE consider organizing a special course using PH staff, MOH and/or others as trainers, either on its own or in conjunction with other organizations.

- Given the very small size of some estate clinics (single Medical assistant or nurse) and delays in replacing leaving staff, it is recommended that on some estates HSAs are given adequate training to provide both oral contraceptives and injectables, and to supervise CBDs. This will allow continuation of FP services in case a medical assistant or nurse is temporarily absent. Again, the exact number to be trained depends on the size, organization and interest of the estate and its medical system.

HEALTH INFORMATION SYSTEM

1. VOLUNTEER ROSTER. Some modifications of the current rosters may be useful.

All rosters:

- Limit the roster to children under two to reduce workload while keeping the highest priority children listed.
- Have the HSA check monthly with the compound watchman whether families entering or leaving the compound have been noted on the roster. Children who have left should have a line drawn through their place on the roster, unless they are expected to return within two months. If they are away longer they should have the line drawn through their entry and be re-entered on a new line when they return. It is not good to have large numbers of children who are not present on the roster.
- Use a blank, lined exercise book for a roster rather than a printed form. These are easy to make and may be more sustainable.
- In selected locations in Thyolo HSAs can be trained to keep the roster themselves (and in Mulanje if they have no trained volunteer in a compound).
- A column for "remarks" is useful for the volunteer or HSA to indicate special circumstances (e.g. child way away the week of the under five clinic).
- Project HOPE should provide to estate medical staff and HSAs the results of the two censuses to show typical high and low season populations in the compounds. These should be used to check if the volunteer is likely to have registered most households. HSAs should take upon themselves to go house to house with the volunteer to help complete rosters that appear incomplete. This demonstrates to the volunteer the correct method and the importance of the roster. Extra effort at first by the HSA will usually pay off in terms of a better working volunteer later.

Immunization roster:

- The HSA should go over the roster monthly with the volunteer and circle those spaces where a child is due for an immunization in the coming month. This helps the volunteer target their attention to those children.
- The HSA can use the number of circles made the previous month that are still not filled with a date as an indication of families that need special education visits.

Growth monitoring roster:

- Change the roster to make each column correspond to a specific month instead of first, second, third, etc. weighing.
- Eliminate the date of weighing and date of next weighing columns and put the date of each month's weighing for that compound at the top of the column under the name of the month. This way each month would require only two columns (weight in kilograms and whether this is an increase or decrease from the previous weight). Optimally, twelve months should fit on a single sheet.
- The HSA should go over the form monthly with the volunteer and circle the spaces in the upcoming month for those children who have not gained weight for two months or who have not been weighed for two months. These children are highest priority for nutrition education and for promotion of going to be weighed in the upcoming month.
- During the next monthly visit, the circles from the previous month that are not filled with the child's weight indicate priority children who were still not weighed. These are an indication of families that need special education visits.
- It may be possible to indicate receipt of vitamin A capsules by putting an "A" next to the weight during a month when a child received vitamin A. If it has been six months since a child received a vitamin A capsule, the HSA should circle the upcoming month and tell the volunteer to inform the family to at least go for a vitamin A capsule.

TTV roster:

- This is a more difficult roster. Consider eliminating the columns for antenatal care since it is hard for volunteers to mix the notion of all women 15-45 with that of pregnant women.
- Repeated individual targeting of women who are eligible for additional TTVs may be counterproductive. Instead, the number who are or are not covered can be used in health education talks to encourage women to go for TTV.
- Mothers can be encouraged to bring their TT cards with them when they go to under five clinics and such clinics should be able to offer TT.

Antenatal Care.

- It would be possible to include a roster for antenatal care and include information on number of antenatal visits, TTV, iron supplements, place of delivery, vitamin A after delivery, etc. to this, but this goes beyond the current training and orientation of either the volunteers or HSAs. It should only be considered if the other rosters are operating very successfully. Given the short time left in the project and the other tasks to accomplish, this is not recommended.

2. HSA CONSOLIDATED REPORT

This report is being used by many estates for monitoring of HSA work and planning of the next month's work, but is not used in other estates. Some revisions of the form are planned, and these can make the form better linked with HSA outputs and planning of work.

- The format of one column per compound is useful and should be kept.
- Volunteers supervised. Keep
- Health education talks/attendance. Modified to show numbers of talks and numbers attending. Keep this. (Is there a problem with talks that cover more than one topic area or are HSAs encouraged to cover only one topic area per talk?)
- Activities generated. Appears useful. Keep.
- U/S and Nutrition clinic. At this time this refers to attendances at the under five and nutrition clinics on the estate. However, some of these clinics do not take place on the estate, and the clinic reports do not indicate which compound a child comes from. Without rosters it is difficult for HSAs to know how many children in a compound attend the clinics these lines in the report have little use. If compound level rosters are being kept, a number of useful items can be included on the HSA monthly report. This may vary by estate depending on the estate's level of interest. Examples include:
    - Total children under five (or under two) currently on the roster. (goal is all children currently in the compound are registered - can be compared to compound population estimates)
    - Immunization. It may be useful to simply indicate number of vaccines given last month to children on the register (all entries under the vaccine columns with a date in the last month). On average this will equal about 25-33% of all children under two (because in their first 24 months children get eight vaccines). If it is consistently lower something is wrong and the HSA or estate medical staff should investigate in more detail.
    - Total children on the roster who were weighed last month (goal is at least 50% of those registered are weighed each month).
    - Total "high priority" children in the coming month for weighing (varies - this is determined by the HSA's "circles" rather than by the volunteer)
    - Total "high priority" children from the last month who were weighed (should be all or nearly all of the children the previous month who were reported as high priority)
- Inspections. This information is very valuable to the estates since the HSAs bring housing and sanitation problems to the attention of management that would otherwise be neglected. However, the situation tends to change slowly and management does not respond well to monthly counts. Monthly counts of numbers of houses inspected may be kept as a measure of how much work the HSA is doing. If there are specific problems discovered requiring quick attention a written report to management should be made (as is the practice on many estates already). The detailed count of satisfactory/unsatisfactory houses and latrines and numbers of other facilities can be made six-monthly with a written report summarizing changes from the previous report and recommendations for improvements.

- Water supply. The types and numbers of water points on compounds is expected to be fairly constant month to month. It would be more practical to report any new problems in writing monthly and to give an assessment of the compound water situation only every six months.
- Infestations. It is not clear how often these categories are used. Their actual use should be reviewed from the computerized records and the opinions of the estate staff and HSAs. May be able to switch to just reporting infestations in writing as special events. Infestations that tend to be chronic may be included in the six-monthly compound assessment.

3. SIX MONTHLY CENSUS

- Project HOPE carried out two rounds of census in this project (August 1995 and April 1996). For the purposes of Project HOPE this gives high and low season populations by target group and further censuses are not a priority for the project.
- For the estates, a six month census just of population would not be a high priority, but if some of the current monthly information is changed to six monthly, it may be worthwhile for the estates to ask the HSAs to carry out six monthly censuses to gather this information. The actual information collected on each estate depends on that estate's own desires and priorities, but may include:
    - numbers of houses, population and target groups (same as previous census)
    - checking to make sure child and adult rosters are complete and updated
    - reporting on overall immunization, growth monitoring and TTV statistics per compound.
    - evaluating numbers of satisfactory/unsatisfactory houses, latrines, rubbish pits, racks, bathing areas, etc. (currently in monthly form)
    - evaluating condition of compound water supply. (currently in monthly form)

4. HIS ANALYSIS BY PROJECT HOPE

The current HIS at Project HOPE has produced a number of useful tables and analysis for use of the project and by management, but there does not appear to be a good routine system of analysis and feedback of standard data: Several steps are recommended to improve this situation.

- The current monthly reporting rate of HSAs is unacceptably low. If it cannot be raised consistently to over 80-90% any analysis is too inaccurate to be of use. The percent of HSAs reporting is a key indicator that needs to be tracked by Project HOPE.
- List out a number of potentially useful ways to analyze and present the currently collected data, with a focus on what is useful to estate medical staff and estate management. This needs to include not just indicators, but also how they are presented and how they should be interpreted. Ease of use and clarity are important. Check if the current HIS or the modifications proposed would be able to produce these analysis and presentations. Would estate medical staff be able to produce these on their own either with or without a computer?

- Generate examples of these analyses and presentations for a few estates and present them to the estates for their consideration. If they find them useful enough to be willing to do them on their own, Project HOPE can train estate medical staff in them. If not they can be dropped.
- Some information analysis is useful when comparing estates, but this can only be done by Project HOPE or another oversight organization. If sustainability plans includes having such an organization, a standard inter-estate comparison can be made that can be generated with minimal data input and analysis.
- As estates get used to analyzing their own data Project HOPE can scale down its own data inputs and analysis operations to only those that would continue after the project, or those needed for the project's own use internally.

SUPERVISION

1. SUPERVISION OF VOLUNTEERS BY HSAs

- How to supervise volunteers needs to be demonstrated by PH staff during regular visits.
- Need to allow variation based on the type of volunteer and what they are willing to do
- Some of the monthly consolidated report revisions should better link of HSA and volunteer activities (i.e. Information from rosters is needed to complete the HSA report).

2. SUPERVISION OF HSAs BY MEDICAL STAFF/ESTATES

- Supervisory training needed in Mulanje and for those Thyolo staff who have not had it. It appears that the quality of supervisory training was good in Thyolo, but it must be expected that some medical staff will make better HSA supervisors than others.
- Training should be longer, allow more time for case studies and practice
- Supervision planning by estate staff should be more formal (e.g. estate medical staff agree with management just how they will supervise HSAs - allow for less frequent field supervision if estate will not support more frequent, etc.) One idea would be to have more supervision in the afternoons, when clinic work tends to be minimal.
- Needs to be linked to improved use of HIS by medical staff and changed mix of HSA work.

3. SUPERVISION OF PROJECT BY PROJECT HOPE STAFF

- Project HOPE staff currently make general workplans for one to several months in the future. However, there is no log kept of supervision or other visits made to estates. Recommend that each PH staff keep such a log so they can easily review for themselves which estates have been visited, which staff and what was done with them. This is needed to help focus the emphasis of PH staff work on priority tasks during the remaining months of the project.

TRAINING

Summary of training plans for the remainder of the project, including recommended changes,

Volunteers

- Volunteers for the remaining Mulanje compounds and villages should be trained. This includes Village health committee orientation in Mulanje villages.
- Volunteer training in Thyolo for estates that wish to support this themselves
- Estates may wish to consider training their compound watchmen as health volunteers since they are more stable.

HSAs

- Help estates fill any gaps that occur by attrition. Estates should be taught how to send new HSAs for MOH training and how to provide orientation to estate conditions once they arrive. If there are topics that are always missing from the MOH training, PH should provide a "training module" for the estates to use.

Estate Medical Staff

- Breastfeeding training
- ARI case management training
- Supervision training for Mulanje staff and update training for Thyolo staff

HIV/FP related training

- Dorm leader training, STD syndromic approach training, FP provider training (expanded in number and including training for some HSAs) and CDB training all should take place as planned but may be funded under either the CSX or STAFH project according to what is most convenient.

System/HIS revision training

- Introduction of some project revisions, such as revised HSA job mix or the revised HIS should be done according to the wishes of each estate and will need to be tailored to each case. This may involve formal training, routine or special meetings with some or all estate staff and training/supervision visits. The exact mix needed should be determined by Project HOPE.

SUSTAINABILITY

VOLUNTEER SYSTEM. The idea of compound health committees appears to be not well accepted by the estates. Instead it is recommended that strengthening of the current system of linking the volunteer to the HSA and compound watchman be used. This involves the compound watchment understanding the job of the health volunteer, helping to organize groups for health talks or other health activities and assisting with registrations or house inspections. It may be possible for watchmen to become health volunteers themselves if some estates are interested in

this. HSAs should be able to work either with or without volunteers so that health activities can continue with or without volunteers in any given compound. It can be expected that while some compounds will continue to have volunteers, a high proportion of volunteers will be maintained only on estates which take a special interest in this activity.

HSA SYSTEM, For maintenance of the HSA system, there are three alternatives:

Current system. Once Project HOPE leaves there will be no oversight or coordination mechanism for estate health services other than that currently provided for some estates drug purchases by the Estate Medical Advisor and the limited contacts with the MOH health system. It can be expected that while no estates will actively eliminate the HSA, those lost by attrition may be hard to replace, due to lack of interest and a need to cut costs on the part of middle management, lack of attention by higher management (who support the idea of HSAs in principle) and lack of an outside oversight organization to bring the problem to attention. The low pay rates of estate HSAs compared to government HSAs may contribute to attrition and make hiring of replacement HSAs more difficult. Some estates have better internalized the HSA role in the estate medical services and so are more likely to keep the system running over the long term. At least in Mulanje the short time the project has been running makes internalization difficult and an additional year may help with sustainability. In the absence of an HSA further health education at the compound level is unlikely. It is difficult to predict what percentage of HSAs would be retained for five or ten years following the project.

Establishment of a local NGO. Thinking on this issue is not settled, but it 'may involve the current Estate Medical Advisor establishing an NGO which would contract with the estates for services in drug procurement and oversight of the HSA system. At least initially the NGO would request some assistance from Project HOPE. In order to be viable the NGO would within one or two years need to find additional funding sources to carry out special activities, such as HSA or volunteer training, which the estates are unlikely to pay for fully themselves. In order to be able to carry out activities either on or off the estates the NGO would be independent of the Tea Association. In any case the NGO would consist of only two or three staff and so would be limited to fewer/less intensive activities than the current project. If the NGO fails to become self-supporting in a few years the situation will revert to the current system. At the time of this report most estates have agreed in principle to support the establishment of such an NGO.

Turnover to a Project HOPE supported advisor. This would involve Project HOPE supporting the cost of a single advisor for a year or two beyond the end of the Child Survival grant to provide a much lower, but continuous oversight to the child survival aspects of the estate medical system. This is made easier by Project HOPE's continued work with the estates under the STAFH project, which will continue until 1998. This gives a longer time for the estates to get used to taking on most efforts by themselves and internalizing the role of the HSA. After 1998 there would be no special arrangement.

The details of how the NGO will relate with Project HOPE or with a Project HOPE supported advisor during the transition after the project should be worked out in detail well before the end

of the project. Since all of the three alternatives imply much less oversight than currently given by Project HOPE, it is important that activities such as simplification and turnover of the information system be started quickly.

ESTATE MEDICAL STAFF AND SERVICES

Curative care services at estate clinics have existed for decades and are unlikely to be reduced as long as the tea estates function. Improvements of standard treatments introduced under the project will last at long as the staff Replacements may have learned the improved protocols from MOH sources, since Project HOPE always follows MOH guidelines in this respect. Project HOPE has worked with the estates (and MOH) to expand the number of Family Planning and Antenatal services available on the estates (and to a lesser extent under five clinics). These meet a felt need of the estate residents, do not require a great deal of estate medical staff time, receive supplies via the MOH and so are likely to be relatively viable over the long term. Family planning work will be supported under the STAFH project until 1998.

VII. SUMMARY

A midterm evaluation of Project HOPE's "Developing Sustainable Child Survival Services with the Private Sector in Malawi: A Replication of Lessons Learned" Child Survival X project was carried out from June 10-21, 1996. The evaluation team included Dr. John Quinley, an independent public health consultant and team leader; Mr. Timothy Kachule (CS Coordinator), Mr. Henry Gondwe, and Mr. Makata (field trainers and supervisors) from the Project HOPE team; Mrs. Mwafuwalira from the Regional Health Office of the Ministry of Health; Mr. Phiri, District Environmental Health Officer (DEHO) from Mulanje and Mr. Kamlomo, assistant DEHO from Thyolo; Dr. Elizabeth Miller as estate medical advisor and Project HOPE consultant; and Dr. Bettina Schwethelm from Project HOPE headquarters.

'The evaluation team reviewed documents, carried out a review of project activities with Project HOPE staff and conducted interviews/discussions with 25 groups of compound/village residents, 2 1 compound/village health volunteers, 14 HSAs, 11 estate medical staff, 16 mid-level estate managers and two district health management teams. Copies of the interview forms/discussion guides are available from the field upon request. The interviews focused most heavily on the issues of the project information system, the use of volunteers, supervision and project sustainability, although a limited number of knowledge questions were asked of HSAs and volunteers. Independently of the midterm evaluation, Project HOPE carried out standard household KPC surveys in both Thyolo and Mulanje, the results of which were available by July 19, 1996 and have been incorporated into this report.

The project has successfully replicated in the Mulanje tea estates and maintained in the Thyolo estates the model of using estate hired HSAs along with compound volunteers to provide health education and other health promotion activities. In addition, the project has successfully extended this model to villages surrounding the estates in Mulanje (which have a population greater than the estate compounds themselves) and extended project scope by assisting with the expansion of family planning and other health services at the estate clinics. This has resulted in large scale health education efforts for compound and village populations under the project and measurable improvements in a large proportion of project objectives, including home fluids use in diarrhea, breastfeeding practices, vitamin A capsule distribution, use of family planning services and HIV knowledge.

Project planning has been focused on achieving the child survival objectives in a manner most consistent with long term sustainability and has been flexible enough to experiment with use of rosters by volunteers to target at risk groups, although the results of this experiment are not yet available. The most relevant lessons learned by this project for others are the potential and methods for working in collaboration with the private sector to achieve child survival objectives.

Key recommendations include a number of modifications to the project information system to make it more useful, a need to co-plan HIV and family planning interventions with the new STAPH funded project, a need to focus attention on those areas in which the project objectives are still not being met, a need for improved tracking of how Project HOPE staff are allocating their efforts in the time leading up to project completion, consideration of an additional year to consolidate work in Mulanje, and a need to work out project sustainability arrangements with the newly established local NGO to be supported by the estates.

Project HOPE staff were members of the evaluation team and so the immediate findings and recommendations were agreed with Project HOPE and implementation started immediately following the evaluation at the end of June, 1996. Verbal feedback to HSAs was provided during the regular quarterly

meeting with Project HOPE in July 1996. Preparation of the written evaluation report was delayed in order to incorporate findings of the household surveys. Selections fi-om this report should be provided to the estate management and medical staff as feedback.

APPENDIX B

Response to Midterm Evaluation Recommendations

Project Response to the Recommendations of the Midterm Evaluation

Project Design:

Several minor changes have occurred in the technical design of the project compared to the DIP and others are recommended at this time:

Recommend the continued use of Rosters by the compound/village volunteers in Mulanje in order to obtain an adequate evaluation.

Recommend the continued inclusion of villages surrounding the estates in Mulanje in order to sustain the MOH HSA/volunteer health education activities.

The project is implementing these recommendations and is placing emphasis on the increased involvement of the MOH

Recommend training current Thyolo HSAs on how to motivate or re-motivate their current or inactive volunteers. This training should include how to carry out their work effectively through the use of Rosters, with and without the use of volunteers.

HSAs in Thyolo feel that they should be the ones filling in the roster. Training of HSAs in the use of the roster is scheduled for the first quarter of the third year.

Recommend providing technical assistance to those estates and compounds that are willing to support their current or new volunteers with the provision that the estates accept most of the financial responsibility of training and the compounds accept some of the financial responsibility for motivation.

In Thy010 some of the estates have already accepted this and trainings will have to be scheduled by the HSAs and their supervisors. The estates companies that have already shown interest are Satemwa and Conforzi.

Recommend that estates be requested to look for ways to motivate volunteers.

This issue will be discussed during the next quarterly meetings with managers and HSAs.

Recommend that communities wishing to have volunteers carefully consider their responsibility for maintaining the volunteer's motivation The possibility of using non-material incentives should be encouraged to the extent possible

This issue will be discussed during the next quarterly meetings with managers and HSAs., as well as in meetings with villages in the project's target area.

Recommend trying to revise the mix of work with selected HSAs in Thyoio and Mulanje in which house to house visits will be expanded to include checking of under five cards and rosters and health education in addition to sanitary inspections.

The project will explore to revise the mix of work of the HSAs. One example will be the HSAs of Thyolo working with the under five roster,

Project Interventions:

Recommend that estate medical staff who supervise HSAs or are otherwise giving nutrition advise to mothers receive the MOH three day intensive training in breastfeeding.

Two sessions, one for Thyolo and one for Mulanje, have been conducted. An additional session for Thy010 is planned.

Recommend the training of estate medical staff in standard ARI case management, either by itself or combined with treatments of other common and important childhood illnesses.

Training of estate medical staff in standard ARI case management will be conducted during the first quarter of the third year.

Recommend training in the advise against home treatment with antibiotics of ARI as part of ARI health education as antibiotics are readily available for purchase in markets.

This issue will be dealt with during ARI case management training. For HSAs (Mulanje and Thyolo) the point was already emphasized during the refresher trainings.

Recommend the completion of the remaining HIV/AIDS and Family Planning activities under the CSX project or the STAFH project which covers the same technical and geographic areas.

The STAFH project will take the lead on these issues.

Recommend that family planning services at the compound level be expanded to include Community Based Distributors of contraceptives.

The STAFH project will take the lead in expanding CBD activities.

Recommend increasing the number of medical staff to be trained in-depth as FP providers from the planned four. The exact number will depend on a review of the situation on each estate

Presently three Thy010 nurses are undergoing a Family Planning providers course with MOH support and two Thyolo nurses have already qualified. In Mulanje all the nurses are already trained as Family Planning providers. Medical assistants have been trained as core-providers.

Recommend that if a large number of providers are found to be potentially benefting from training, that Reject HOPE consider organizing a special course using PH staff, MOH and /or others as trainers, either on its own or in conjunction with other organizations.

This recommendation will be implemented under the STAFH project.

Recommend that HSAs on certain estates be given adequate training to provide both oral contraceptives and injectables and to supervise CBDs.

This was not planned by the CS project, but will be implemented under the STAFH project.

Health Information System:

Recommend limiting the volunteer roster to children under two to reduce the workload while keeping the highest priority children listed

This recommendation has been implemented. Mulanje volunteers are already using the revised form.

Recommend having the HSA checking monthly with the compound watchman on whether or not families entering or leaving the compound have been noted on the roster.

This will be emphasized during supervision visits, particularly since this already works well in Mulanje. In Thyolo the volunteer will be assisting the HSAs in updating the roster.

Recommend using a blank, lined exercise book for a roster rather than a printed form.

Such a book will be introduced during the volunteer refresher training in Mulanje and when the Thyolo HSAs are trained in the use of the roster.

Recommend training the Thyolo HSAs to keep the roster themselves.

This training is scheduled for the first quarter of the third year.

Recommend that Reject HOPE provide to estate medical staff and HSAs the results of the two censuses to show typical high and low season populations in the compounds.

This has already been done in Mulanje and will be done in Thyolo in the first quarter of the 3rd year.

Recommend that the HSA review the immunization roster on a monthly basis with the volunteer and circle those spaces where a child is due for an immunization in the coming month.

This has already been implemented with the Mulanje HSAs, and HSAs in Thyolo will be doing it themselves on the rosters.

Recommend that HSAs use the number of circles made during the previous month that are not filled with a date as an indication of families that need special education visits concerning immunizations.

This is what HSAs are doing in Mulanje now in nutrition follow-ups, and will be done by the Thyolo HSAs themselves on the rosters.

Recommend changing the immunization roster to make each column correspond to a specific month.

This has already been implemented.

Recommend eliminating the date of weighing and date of next weighing columns on the immunization roster. (Rut the date of each month's weighing for that compound at the top of the column under the name of the month, thus requiring only two columns--weight in kilograms and increase vs decrease from previous weighing.)

This has already been done, and volunteers are using the revised version in Mulanje. The HSAs in Thyolo will be trained with the revised roster.

Recommend that the HSA review the form monthly with the volunteers and circle the spaces in the upcoming month for those children who have not gained weight for two months or who have not been weighed in two months.

This is presently being practiced in Mulanje and will be done in Thyolo after the roster training.

Recommend that HSAs note the receipt of vitamin A next to the weight during a month when a child received vitamin A.

This has already endorsed and it will be part of the refresher training for the volunteers in Mulanje.

Recommend considering the elimination the columns for antenatal care on TTV roster.

They have already been separated. Women of child bearing age are separate from pregnant women.

Recommend using a different methodology for reaching women who are eligible for additional TTVs by using the number who are or are not covered in health education talks to encourage women to go for TTV.

Awareness will be increased through home visits and drama groups. Tracing will be intensified

using the roster.

Recommend to not implement the use of an antenatal roster due to the short time left in the project and the other tasks to accomplish. Later implementation of this roster for antenatal care will include information on number of antenatal visits, TTV, iron supplements, place of delivery, vitamin A after delivery. This roster should be implemented only after it has been determined that the other rosters are operating very successfully.

The project is still using the ante-natal roster, but it has been separated from the women of child bearing age roster. We are checking on TTV, malaria prophylaxis, and antenatal visits,

Recommend revision of the HSA Consolidated report that will improve the link between the form and the HSA outputs and planning of work

The revision has been completed.

Recommend modifying the HSA Consolidated report to show number of talks and numbers attending the Health education talks.

This has been completed, and Mulanje HSAs are reporting accordingly.

Recommend modifying the HSA monthly report to indicate U/5 and Nutrition clinic activities. This information would be derivedfrom rosters and include information such as total children under five (or under two) currently on the roster, immunization or number of vaccines given in the last month to children on the register, total children on the roster who were weighed last month, total "high priority" children in the coming month for weighing.

These recommendations have been implemented.

Recommend including information on the consolidated report concerning housing and sanitation problems detected during inspections. This information would include monthly counts of numbers of houses inspected and kept as a measure of how much work the HSA is doing. Specific problems requiring quick attention would be reported in a written report to management. The detailed count of satisfactory/unsatisfactory houses and latrines and numbers of other facilities can be made siw-monthly with a written report summarizing changes from the previous report and recommendations for improvements.

The project agrees with this recommendation and is implementing it.

Recommend that water supply information including the types and number of water points on compounds be reported only every sir months.

This information is now contained in the bi-annual census forms.

Recommend the review of the use of the categories concerning "infestations" on the Consolidated report

This response category is still being used, but only the number of dwellings with infestations is recorded, rather than the type of infestation.

Recommend that six month census include information collected on each estate to include numbers of houses, population and target groups, checking to make sure child and adult rosters are complete and updated, reporting on overall immunization, growth monitoring and TTV statistics per compound, evaluating condition of compound water supply.

The project is implementing this recommendation.

Health Information Systems

The current HIS at Project HOPE has produced a number of useful tables and analysis for use of the project and by Management, but there does not appear to be a good routine system of analysis and feedback of standard data

Recommend Project HOPE track the monthly reports of HSAs in order to raise the reporting rate to 80-80%.

A checklist has been designed for tracking missing reports and good filing system has been developed at HOPE office. Estates are also being encouraged to maintain a good filing system for HSA monthly reports.

Recommend listing a number of potentially useful ways to analyze and present the currently collected data with a focus on what is useful to estate medical staff and estate management.

This was started during the HSA refresher training in Mulanje on the topic of "HIS," and a training session is planned for the estate medical staff in Thyolo.

Recommend generating examples of analyses and presentation for a few estates and present them to the estates for their consideration. If thq find them useful enough to be willing to do them on their own, Project HOPE can train estate medical staff in them

The implementation of this recommendation is still in the planning phase and will be discussed first with the managers during manager's meetings.

Recommend that Project HOPE staff or similar oversight organization provide comparative information analysis that can be generated with minimal data input and analysis.

Project HOPE is working on it.

Recommend that Project HOPE scale down its own data inputs and analysis operations to only those that would continue after the project, or those needed for the project's own* use *internally.

This has already been implemented. The analyses are now focused only on the consolidated form and the OPD report.

Supervision:

Recommend that Project HOPE staff provide HSAs with demonstrations on how to supervise volunteers allowing for variations based on the type of volunteer and what they are willing to do.

This was covered during the HSA refresher training.

Recommend that the supervisory staff in Mulanje and those Thyolo staff who have not had it, receive supervisory training.

Two training sessions have already been conducted, one for Mulanje and one for Thyolo

Recommend that supervisory training is made longer and will allow more time for case studies and practice.

The trainings now are for three days compared to two days previously, and more practical exercises are integrated into the trainings.

Recommend that supervision planning by estate staff is made more formal.

Estate staff have been asked to come up with supervision schedule.

Recommend that Project HOPE keep a log of the general workplans and include which estates have been visited, which staff and what was done with them

Each Project HOPE staff is now developing and submitting a monthly workplan.

Recommend training volunteers for the remaining Mulanje compounds and villages, including providing Village Health committee orientation in Mulanje villages.

The project is planning to implement this recommendation.

Recommend volunteer training in Thyolo for estates that wish to support this themselves.

Has already been discussed with HSAs and their supervisors during the quarterly meeting and two estates, Satemwa and Conforzi, have accepted.

Recommend training for estate watchmen as health volunteers since they are more stable

This recommendation does not appear feasible. The scope of work of the volunteer may be too much for the watchmen and/or conflict with their other duties.

Recommend helping estate to fill any gaps that occur by attrition by teaching the estate how to send new HSAs for MOH training and how to provide orientation to estate conditions once they arrive

This is being implemented already: two new HSAs in Mulanje are undergoing basic training by the MOH, and in Thyolo arrangements are underway to send the new HSAs to government trainings.

Recommend providing estate medical staff with training in breastfeeding, ARI case management, supervisory training for Mulanje staff and updating the training for Thyolo staff

Exclusive breastfeeding and supervisory skills training has been completed. Soon ARI case management training will be carried out.

Recommend HIV/FP training for dorm leaders, STD syndromic approach training, FP provider training and CDB training take place as planned but funded under the CSX or STAFH projects.

The dorm leaders have been trained. Training of the other groups is planned under the STAFH project.

Recommend that HIS revision training that includes the introduction of some project revisions should be done according to the wishes of each estate and will need to be tailored to each case

The project agrees with this and is adapting refresher trainings accordingly.

Sustainability:

Recommend that strengthening of the current system of linking the volunteer to the HSA and compound watchman be used

In the estates that are interested in training and maintaining volunteers, it is emphasized that volunteers work closely with the HSA and the compound watchmen.

Recommend for the maintenance of the HSA system a review of three alternative plans for sustainability: Current system, Establishment of a local NGO, Turnover to a Project HOPE supported advisor.

A local NGO has been formed in Thyolo which will be funded in part by some of the estates

(Eastern Produce) that may be able to assume responsibility for some of the components of the HSA system.

Recommend estate medical staff and services continue to use MOH guidelines.

All trainings are conducted jointly with the MOH, using MOH guidelines.